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Functional Test Example for Distributed Interactive Simulation

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14. ABSTRACT *(Maximum 200 words)*:

Functional tests serve to document and verify the anticipated functionality of a system prior to formal testing. Shortcomings in projected functionality may severely compromise the results of developmental and operational testing as well as undermine efforts to improve and acquire the needed functionality anticipated with these systems. Although much of the Army's current system testing is being conducted in virtual simulation such as the Distributed Interactive Simulation (DIS) environments, methods for conducting functional tests in DIS are not well documented. This report provides a detailed example of the method and tools used to perform a functional test of a digital command and control system in DIS-based virtual simulation. This example includes detailed functional checklists for specific system components and for generic DIS-based simulators, semiautomated forces, and supporting test bed utilities. The application of such functional test methods should improve Army testing and assist in determining the functionality needed to attain and sustain anticipated military capabilities.

15. SUBJECT TERMS

Distributed Interactive Simulation	Acceptability testing	Virtual simulation
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FUNCTIONAL TEST EXAMPLE FOR DISTRIBUTED INTERACTIVE SIMULATION

CONTENTS

FUNCTIONAL TEST EXAMPLE FOR DISTRIBUTED INTERACTIVE SIMULATION

Introduction

Functional tests serve to document and verify the anticipated functionality of a system prior to formal testing. Shortcomings in projected functionality may severely compromise the results of developmental and operational testing as well as undermine efforts to improve and acquire the needed functionality anticipated with these systems. Much of the Army's current system testing is being conducted in virtual simulation such as the Distributed Interactive Simulation (DIS) environments (Sikora and Coose, 1995) used for Advanced Warfighting Experiments (AWEs) and Battle Lab Warfighting Experiments (BLWEs). The method and procedures for conducting functional tests in virtual simulation, however, are not well documented. This report provides a detailed example of the method and tools used to perform a functional test of a digital command and control system in DIS-based virtual simulation.

The functional test example provided herein was developed as part the Army Research Institute's (ARI) research and development program in DIS titled Combat Vehicle Command and Control (CVCC). This program of research entailed a series of soldier-in-the-loop evaluations on future command, control and communication system configurations conducted at the Mounted Warfighting Test Bed at Fort Knox (Leibrecht, Meade, Schmidt, Doherty & Lickteig, 1994). The functional test for such configurations included operator checklists for three primary developmental M1A1 tank subsystems: the Command and Control Display (CCD) for tank-based digital communications, the Commander's Independent Thermal Viewer (CITV) for improved acquisition and engagement, and an on-board Position Navigation (POSNAV) system for improved navigation and maneuver. The actual operator's checklists and other tools developed for these subsystems were necessarily unique to the precise functionality anticipated from these CVCC components.

The range and type of operator checklist items for primary system components that are provided herein, however, provide detailed examples that might be adapted for other functional tests. This functional test example also provides more generic methods and tools required to assess the functionality of supporting DIS-based simulators, semiautomated forces and other utilities such as communication and data collection systems that are generally employed in virtual simulation testing. The operator checklists and tools developed and provided for these generic DIS capabilities can be readily adapted to support virtually-based functional tests.

Overall, this example of a functional test might direct and inform testers' and evaluators' systematic review of the functionality required for DIS-based research. This example serves as a useful checklist to remind testers of the extensive nature of functional test requirements, particularly for virtual test environments. The application of such functional test methods will better ensure subsequent Army tests are not compromised by shortcomings in functionality, and better document unavoidable shortcomings and their impact on test results. Most importantly, the application of such functional test methods will better identify the functionality needed to attain and sustain anticipated military capabilities.

The CVCC Functional Test Plan

The purpose of the CVCC Functional Test is to thoroughly evaluate the hardware and software for the forthcoming CVCC Battalion Formative Evaluation (Leibrecht et al., 1992) to assess detailed, functional tests of the hardware and associated software for the modified M-1 simulators, tactical operations center, semi-automated forces, control network and data collection systems to insure all aspects of the network are ready for the conduct of scenario and data collection exercise events. Phase two will utilize a scenario rehearsal and two data collection rehearsals in order to load the simulation network systems at a level which is essentially the same as that which will be encountered during the actual formative evaluations. A side benefit associated with both phases will be the additional training provided to the research assistants who will participate in the formative evaluations.

1. The functional test for the CVCC simulator configuration will be more complex than the Baseline Benchmark Test previously conducted. The CVCC Functional Test involves a number of complex modules which must be functionally evaluated. Since only four days are available, the concept of the test must vary from that used in the Baseline Benchmark Test. The CVCC Functional Test will utilize teams of research assistants and soldiers to evaluate the functional capabilities of the various simulator systems; a team will evaluate the TOC workstations and communications; a team will evaluate the Semi-Automated Forces (SAFOR) workstations, systems, and communications; the Exercise Control Room (ECR) personnel will evaluate the utility programs and workstations, ECR communications, and the other ECR equipment. The test will be broken into two major phases; each phase is structured to "load" the formative evaluation network with voice and data traffic to a level at or above that which is anticipated during the actual formative evaluation.

a. Phase 1. This phase is primarily a checkout of equipment functionality by causing the modules of the total system to perform each of the design functions expected of each individual module, with each module configured as it will be for the formative evaluation. The phase will be conducted with the Tactical Operating Center (TOC) staff controlling and recording the actions of the simulator mounted teams as they checkout and report the results of the functioning of each separate simulator mounted module. The TOC workstation modules will also be functionally checked out during this period. Both voice and digital message traffic will be passed in both directions to stress the network and to insure that each functional module is thoroughly checked out. The ECR staff and the SAFOR staff will conduct functional evaluations of the simulation systems programs, CVCC utility programs, and the SAFOR (both Blue Forces (BLUFOR) and Opposing Forces (OPFOR)) during this phase. The ECR staff will place Management, Command, and Control (MCC) target vehicles on the terrain to support checkout of the CVCC simulator systems; the BLUFOR will also be utilized in tethering to the CVCC systems during this phase also.

b. Phase 2. The first day will use a scenario context and the activity on the next day will use data collection exercises, in both cases controlled by the exercise director, in order to emulate activities, program and network stress anticipated during the CVCC formative evaluations.

c. Checklists will be used to guide module checkout and time will be allotted each day to

conduct debriefing and for filling out checklists and problem reports to provide information on any discrepancies noted.

2. The use of teams will allow dual comparison of the same systems in each of the simulators by independent teams which should provide a more thorough evaluation of these systems. The battalion tactical operations center, the semiautomated forces and the exercise control room teams will be charged with the functional evaluation of the systems which they will use during the formative evaluations. Since this test is a functional evaluation of a more complex group of systems; the use of teams should provide a more thorough evaluation of each of the systems.

3. Personnel requirements for the test, in addition to the contractor and site staff are: eight (8) research assistants (RAs) and eight (8) soldiers as teams to check out tank simulator systems; two (2) research assistants to conduct TOC workstation testing; and two (2) RAs to conduct testing on the SAFOR. The breakout of teams is as follows:

a. Teams 1 thru 8 - Simulator Teams (Each team consists of one (1) RA and one (1) soldier/driver). These teams will be tasked to conduct the testing of the Basic Simulator, CCD and the CITV functioning. These teams will be responsible for determining the correct functioning of all the simulator systems. These systems are:

(1). Basic M-1 Simulator Mobility. This includes the Before Operation Inspection of the simulator, the starting and operation of all automotive systems and the visual and sighting systems of the simulator (including the checkout of all sighting and observation channels). The fording capability and other mobility characteristics will also be checked.

(2). The Armament systems capability. This includes the turret controls, the main gun, the autoloader, main gun ammunition capacity, replenishment and restowage of ammunition, and the sighting system including lead dumping and ammunition selection.

(3). The Sound systems capability. This includes the fidelity of the sound system, the accuracy of the system relative to activities in progress which would cause specific sounds (ex: artillery fire falling nearby should cause the sound system to produce the sound of such fires) and determining whether anomalous sound problems have been corrected.

(4). The Single Channel Ground to Air Radio System (SINCGARS) systems capability. This includes the system initialization, voice communication quality, and any interruptions in voice or data communications both in the simulator intercom and on both radio channels. Data messages and voice message traffic will be concurrently conducted to provide network loading and to provide additional evaluation of the SINCGARS radios.

(5) The CCD systems capability. This will include the preparation and dispatch of all message formats, the reception and display of all messages and overlays, utilization of all map manipulation and message and overlay file functions and navigational aids including the functioning of the driver's steer-to device.

(6). The CITV functioning and interface with the main gun system and with the Command and Control display system. This includes all functions of the CITV; the operation of the Laser Rangefinder (LRF) and the integration of the CITV with the CCD.

(7) Further information on the details of the functional testing of Teams 1 thru 8 may be found in Appendix A.

b. Team 9 - Battalion Tactical Operations Center Workstation Systems (This team will consist of one (1) subject matter expert (SME), two (2) RAs, and one site staff member). This team will functionally test the Battalion Tactical Operation Center (BTOC) workstations (WS) and communications (both voice and data). TOC workstation functional modules will be as set out in Appendix A. In addition, the BTOC team will record the testing actions and results reported by Teams 1 thru 8.

(1). All overlay preparation/dispatch and map functionalities will be tested on each of the WS.

(2). Message reception, map posting and message filing, according to the BTOC Standard Operating Procedure, will be included.

(3). The internal workstation job aides provided (eg: the various formats for estimates and orders) will be utilized and dispatched.

(4). The BTOC records (journals and workbooks) will be utilized and evaluated.

(5). Message preparation (including free text messages), aggregation, relaying, and filtering will be tested and evaluated.

(6). Fire Support, Operational Effectiveness and Concept of Operation modules will be evaluated.

(7). This team is also assigned the responsibility of evaluating the STEALTH vehicle functionality.

c. Team 10 - Semi-Automated Forces Systems (This team will consist of one (1) site staff member, and two (2) RAs). This team will functionally test the Semi-automated Forces Workstations, both the OPFOR and BLUFOR, and their communications (both voice and data).

(1). Scout platoon functionality and reporting will be tested.

(2). Tethering, unit activation, and BLUFOR watercrossing will be tested.

(3). Communication with higher echelons and receipt of information from the SAFOR units will be evaluated.

d. Team 11 - Exercise Control Room (ECR) and Utility Software Systems. This team consists of the exercise director and one (1) site staff member. This team will functionally test the ECR equipment, the Utility Programs and WS, and their communications. This team is also responsible for ensuring the data loggers and mini-cameras are functionally tested during the benchmark test and that the data and video quality is excellent.

(1). All ECR equipment will be utilized and, in a deliberate fashion, all functionality will be exercised and evaluated.

(2). The normal communications with the BTOC will be exercised and evaluated.

(3). The SEND, LISTEN, and CHECKPOINTING utilities will be exercised and evaluated.

(4). The data loggers will be utilized during the benchmark test. Extracts of the data from each data logger, selected at random, will be evaluated for accuracy and validity.

(5). The mini-cameras will be utilized during the benchmark test in a manner analogous to the manner they will be used in the Formative Evaluation.

(6). In coordination with the site staff, it is desired to utilize all three available data recorders at various times during the test. The normal mode for the recorders is to have a primary recorder (dual drive) on the network at all times. Performance of the data recorder must be monitored to insure that no (minimal) data loss occurs due to logger failure. A back-up data

logger must be available to preclude loss of troop time during formative evaluations.

4. Network Configuration. The network configuration to be used for the functional test is identical with the network as it will be for the Formative Evaluation. The simulation bay layout diagram is shown in Appendix A.

a. Prior to the Functional Test and after all software has been installed. Site personnel are requested to make the following special technical checks and to prepare the following records for inclusion in the functional test report:

(1) The version and date for each piece of software installed be recorded for each equipment item on the network.

(2) All color monitors be checked for calibration.

(3) Boresight on all simulator main guns be checked.

(4) Proper voltages be verified at IDC boards.

(5) As hardware faults are identified and corrected, report the fault and corrective action taken at the end of each test day to the test director in writing.

b. For each day of the Functional Test the network configuration will be as follows:

(1). CVCC simulators will be initialized in full CVCC mode.

(a) CITV without target stacking, and auto target tracking.

(b) CCD with touch screen and Commander's Handle cursor control operational.

(c) POSNAV and Driver's Steer-to display activated.

(d) Autoloader enabled. Ammunition basic load - 40 rounds.(Sabot - 27 rounds, HEAT - 13 rounds).

(e) SINCGARS configured as for the formative evaluation. The SINCGARS will be brought up from a cold start each morning.

(2). TOC workstations will be configured as shown in Appendix A. The TOC printer will be connected to the S-3 (Operations) and the S-2 (Intelligence) workstations. Files from other workstations which must be printed can be copied to either of these two workstations for printing. The CSS workstation will be located in the Exercise Control Room but will be on the TOC local area network.

(3). The BLUFOR will be operated with the Commander's view setting only and be configured as follows:

(a) Gunnery Proficiency - Competent (DCE#3 - Novice).

(b) Detection Range - 3500 meters

(c) Open fire Range - 2500 meters (DCE#1 - 2000 meters; DCE#3 - 2200 meters)

(d) Company D of the battalion will be 100% SAFOR.

(e) The Battalion Scout Platoon will be configured as two sections of three

(3) Bradleys each. (SAFOR workstation in Commander's View).

[i] Gunnery Proficiency - Novice (DCE#3 - Master).

[ii] Detection Range - 3500 meters.

[iii] Open Fire Range - Test 2 & 3 - 3000 meters; Test 1 & 4 - 2000 meters.

(4). Unless required for other testing or evaluations, the Stealth is requested to be available on the network.

(5). The minicams and video tape recorder will be on the network and the mini cams will be located as directed for the Formative Evaluation.

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Leibrecht, B. C., Meade, G. A., Schmidt, J. H., Doherty, W. J., & Lickteig, C. W. (1994). Evaluation of the combat vehicle command and control system: Operational effectiveness of an armor battalion (ARI Technical Report 998). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. (AD A282 727)

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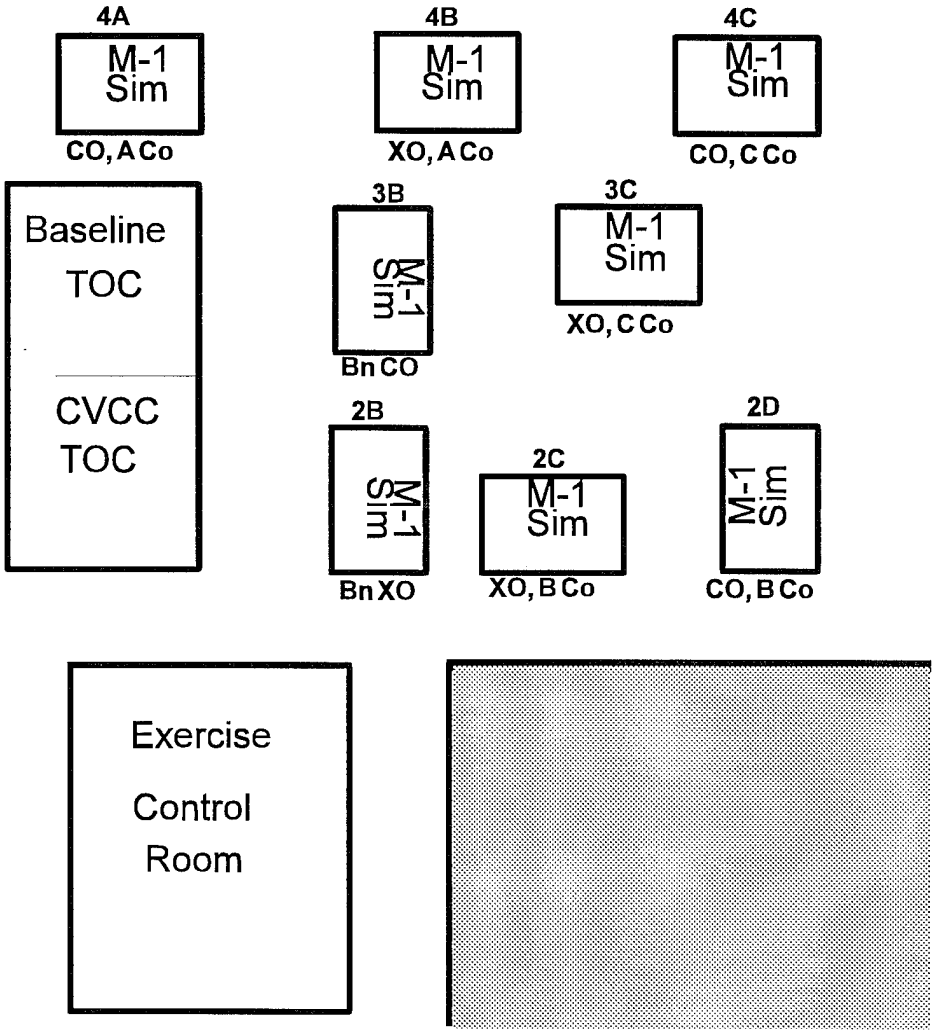
APPENDIX A
METHOD, TOOLS, AND CHECKLISTS

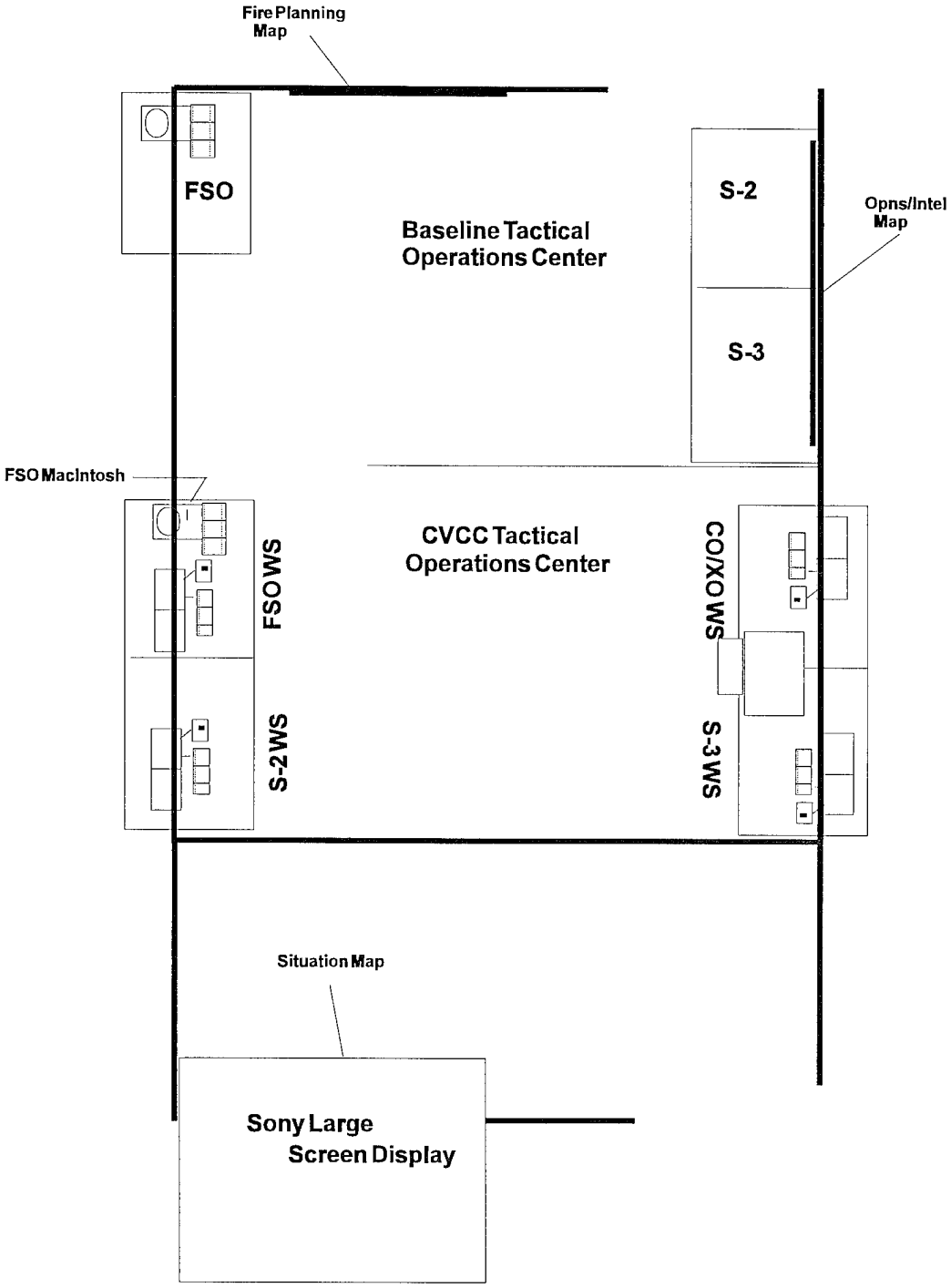
Functional Test Schedule

Day/Date	Team	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	Remarks
Monday 31 Aug	1 thru 8	Orientation	Verify basic operation of: mobility armament, sound, and SINCGARS Systems.			LUNCH	Continue Morning Check-out and verify operation of CCD and CITV				Debrief	15 minute Breaks at 0940 and 1350 hrs.
	9		Verify TOC Workstation functions & record Tm 1 - 8 reports				Continue AM Operations preparation and dispatch.	Verify Overlay				
	10		Verify SAFOR Operations (both BLUFOR & OPFOR)				Continue AM Operations and verify scout platoon and tethering functions.					
	11		Verify PVD and Utility Programs.				Continue AM Operations and verify CSS WS Functions					
Tuesday 1 Sep	1 thru 8	Orientation	Verify basic operation of: mobility armament, sound, and SINCGARS Systems.				Continue Morning Check-out and verify operation of CCD and CITV				Debrief	Each Team mounts a new simulator
	9		Verify TOC Workstation functions & record Tm 1 - 8 reports				Continue AM Operations preparation and dispatch.	Verify Overlay				PM - Printer check out.
	10		Verify SAFOR Operations (both BLUFOR & OPFOR)				Continue AM Operations and verify scout platoon and tethering functions.					
	11		Verify PVD and Utility Programs.				Continue AM Operations and verify CSS WS Functions					Transfer reports from CSS WS to TOC
												15 minute Breaks at 0940 and 1350 hrs.
Wednesday 2 Sep	ALL TEAMS	Run Defensive Scenario (Checkpoint at Lunchtime) Orientation					Continue Scenario (Start from Checkpoint)				Debrief	All Staff and Research Assistants prepare written comments.
												15 minute Breaks at 0940 and 1350 hrs.
Thursday 3 Sep	ALL TEAMS	Run DCE #1					Run DCE #2				Debrief	All Staff and Research Assistants prepare written comments.
												15 minute Breaks at 0940 and 1350 hrs.

CVCC Floor Layout
&
Simulator Assignments



Battalion Tactical Operations Center Layout



Simulator Assignments

	31 Aug	1 Sep	2 Sep	3 Sep
Team 1	4A	4B	4C	3C
Team 2	4B	4C	3C	3B
Team 3	4C	3C	3B	2B
Team 4	3C	3B	2B	2C
Team 5	3B	2B	2C	2D
Team 6	2B	2C	2D	4A
Team 7	2C	2D	4A	4B
Team 8	2D	4A	4B	4C

TEAM 1 THRU 8 SIMULATOR ASSIGNMENTS

Exercise Coordinator Floor Supervisor

Team 1 4A 4B 4C 3C
Research Assistant_____ Driver_____

Team 2 4B 4C 3C 3B
Research Assistant_____ Driver_____

Team 3 4C 3C 3B 2B
Research Assistant_____ Driver_____

Team 4 3C 3B 2B 2C
Research Assistant_____ Driver_____

Team 5 3B 2B 2C 2D
Research Assistant_____ Driver_____

Team 6 2B 2C 2D 4A
Research Assistant_____ Driver_____

Team 7 2C 2D 4A 4B
Research Assistant_____ Driver_____

Team 8 2D 4A 4B 4C
Research Assistant_____ Driver_____

CVCC CCD STATUS INFORMATION OPERATOR'S CHECKLIST

Research Asst: _____ Date: _____
Simulator #: _____

	STATUS	ITEM	REMARKS
1.	_____	Verify own tank icon initially centered on CCD map (1-1).	
2.	_____	Verify correct unit designation appears in CCD status information box (1-1).	
3.	_____	Verify heading information displayed in CCD status information box matches the vehicle heading in degrees in the driver's display (1-1).	
4.	_____	Verify vehicle orientation updates in the CCD status information box and on the CCD map as vehicle rotates or neutral-steers (1-1).	
5.	_____	Verify vehicle location displayed in CCD status information box is within 100 meters of actual location (1-1).	
6.	_____	Verify vehicle location updates in the CCD status information box and on the CCD map as vehicle moves (1-1).	
7.	_____	Verify own tank icon is clearly identifiable on the CCD map (1-1).	
8.	_____	Verify main gun indicator on the own tank icon is clearly identifiable and displays the correct orientation (1-1).	
9.	_____	Verify the main gun indicator updates to display the correct orientation of the main gun rotates (1-1).	
10.	_____	Verify CITV indicator is clearly identifiable on the own tank icon and displays the correct orientation (1-1, 14-1).	
11.	_____	Verify CITV indicator updates to display the correct orientation as the CITV rotates (1-1, 14-1).	
12.	_____	Verify date-time-group displayed in the CCD status information box is correct and synchronized with other CCDs (1-1).	

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

CVCC CCD POSITION NAVIGATION (POSNAV)
OPERATOR'S CHECKLIST

Research Asst: _____ Date: _____
Simulator #: _____

	STATUS	ITEM	REMARKS
1.	_____	Verify friendly icons appear on the CCD map at correct locations (2-1).	
2.	_____	Verify friendly icons are blue on CCD map (2-1).	
3.	_____	Verify friendly icons are properly labeled:	
		a. Individual vehicle labels appear directly beneath the vehicle icon on CCD map (2-1).	
		b. Unit designators are positioned properly when Plt, Co or Bn is selected on CCD map (2-1).	
4.	_____	Verify correct functioning of aggregation and deaggregation on the CCD map (2-1, 2-2).	
		a. Aggregation/deaggregation functions properly at Plt, Co, and Bn level (2-1, 2-2).	
		b. Aggregation/deaggregation parameters and defaults are unique for each CCD map scale (2-1, 2-2).	
5.	_____	Verify UTM map coordinate entry in selected waypoint fields on CCD NAV menu (7-1) matches the CCD map location.	
6.	_____	Verify correct waypoint symbols appears on CCD map (7-1).	
7.	_____	Verify lines between consecutive waypoint symbols on the CCD map (7-1).	
8.	_____	Verify line between your tank icon and waypoint designated for driver on CCD map (7-1).	
9.	_____	Verify driver's display activated only when waypoint is designated (7-1).	
10.	_____	Verify distance to waypoint appears correctly in the CCD alert area (7-2).	

11. _____ Verify selected waypoint number and correct distance to waypoint appear on the driver's display (7-2).

12. _____ Verify correct update of the driver's steer-to-indicator (STI) and distance to waypoint while tank is moving (7-2).

13. _____ Verify correct update of tank icon, and the tank-waypoint line on CCD map while tank is moving (7-3).

14. _____ Verify automatic selection of next waypoint when AutoAdv is selected and tank is within 100 meters of a waypoint on CCD and STI (7-3).

15. _____ Verify automatic selection of next waypoint does not occur on CCD NAV menu when AutoAdv is NOT selected (7-3).

16. _____ Verify display of "autoadvance to waypoint..." message in CCD alert area when waypoint updates (7-3).

17. _____ Verify redisplay of distance to waypoint in CCD alert area when waypoint updates (7-3).

18. _____ Verify Clr Fld button on CCD NAV meny clears only the selected waypoint (7-2).

19. _____ Verify Clr All button on CCD NAV menu clears all waypoints currently displayed (7-2).

20. _____ Verify correct operation of the SAVE route file function on the CCD NAV menu (7-4).

21. _____ Verify accurate transmission of route files sent to other simulators (7-7).

22. _____ Verify accurate reception of route files sent from other simulators (7-7).

23. _____ Verify correct display of route headers in the route file (7-6, 7-7, 7-8).

24. _____ Verify correct display of dashed-in route when using the files to select a different route (7-6).

25. _____ Verify correct operation of the SHOW route function in the route file (7-8).

26. _____ Verify the correct operation of the DELETE route function in the route file (7-8). _____

27. _____ Verify the correct operation of the MAKE ACTIVE function in the route file (7-6). _____

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

CVCC CCD COMBAT REPORT OPERATOR'S CHECKLIST

Research Asst: _____ Date: _____
Simulator #: _____

#	STATUS	ITEM	REMARKS
1.	_____	Verify Call For Fire (CFF) report creation using the CCD (9-1).	
	_____	a. Verify ability to enter valid what (check icons for each type), and where information (by touching or lasing) in report format (9-1).	
	_____	b. Verify OT Line appears when grid is entered in report format (9-1).	
	_____	c. Verify post to map function correctly places icons on CCD map (11-6).	
2.	_____	Verbally verify accurate transmission of CFF report to Bn TOC using send function. Check report contents.	
3.	_____	Verbally verify accurate transmission of CFF report to another CCD using send function. Check report contents.	
4.	_____	Verify Adjust (Fire) report format correctly appears after sending the CFF report (12-1).	
5.	_____	Verify copy of the report sent appear in the CFF old file (11-5).	
6.	_____	Verify Adjust (Fire) report creation using the CCD (12-1).	
	_____	a. Verify entry of target location by touch or lasing (12-1).	
	_____	b. Verify entry of shift information (Left/ Right and Drop/Add optiions) in report format (12-1).	
	_____	c. Verify selection of FFE (Fire for Effect) or EOM (End of Mission) box in report format (12-1).	
	_____	d. Verify post to map functon correctly places icons on CCD map (11-6).	
7.	_____	Verbally verify accurate transmission of Adjust (Fire) report to Bn TOC using send function. Check report contents.	

8. _____ Verbally verify accurate transmission of Adjust (Fire) report to another CCD usting send fuction. Check report contents.

9. _____ Verify copy of the report sent apppear in the Adjust old file (11-5).

10. _____ Verify Contact report creation using the CCD (12-2).

_____ a. Verify entry of valid what (check icons for each type), and where information (by touch or lasing) in report format (12-2).

_____ b. Verify post to map function correctly places icons on CCD map (11-6).

11. _____ Verbally verify accurate transmission of Contact report to Bn TOC using send function. Check report contents.

12. _____ Verbally verify accurate transmission of Contact report to another CCD using send function. Check report contents.

13. _____ Verify copy of the report sent appears in the Contact old file (11-5).

14. _____ Verify Intel report creation using the CCD (12-3).

_____ a. Verify entry of valid enemy what (check icons types and color), number (using the keypad), where (by touching or lasing), activity, and heading information in the report format (12-3).

_____ b. Verify entry of valid friendly what (check icons types and color), number (using the keypad), where (by touching or lasing), activity, and heading information in the report format (12-3).

_____ c. Verify entry of valid obstacke what (check icons types and color), and where (by touching or lasing) information in the report format (12-3).

_____ d. Verify entry of As of information in the report format (12-3).

_____ e. Verify correct operation of the summary page in the report format (12-3).

_____ f. Verify post to map function correctly places icons on CCD map (11-6).

_____ g. Verify operation of Next, Cancel, and Back buttons (11-6).

_____ h. Verify item selection on P3 brings up the correct page for editing and replaces the next button with a SUMMARY button (12-3).

_____ i. Verify pressing summary button takes you to P3 (12-3).

15. _____ Verbally verify accurate transmission of Intel report to Bn TOC using send function. Check report contents.

16. _____ Verbally verify accurate transmission of Intel reprot to another CCD using send functon. Check report contents.

17. _____ Verify copy of the report sent appear in the Intel old file (11-6).

18. _____ Verify NBC report creation using the CCD (12-6).

_____ a. Verify entry of valid Obs Loc, Atk Loc (by touch or lasing), Burst (check icons for each type), and Attack (check options) information in report format (12-6).

_____ b. Verify entry of Flash/Bang Time, Number Shells, Nuc Crtr Diam(m), Nuc Cloud We(deg), and Nuc Cloud Ht(deg) in report format. Each of these items use the nemeric keypad (12-6).

_____ c. Verify post to map function correctly places icons on CCD map (11-6).

_____ d. Verify entry of As of information in the report format (12-6).

_____ e. Verify correct operation of the summary page in the report format (12-6).

_____ f. Verify post to map function correctly places icons on CCD map (11-6).

_____ g. Verify operation of Next, Cancel, and Back buttons (12-6).

_____ h. Verify item selection of P3 brings up the correct page for editing and replaces the next button with a SUMMARY button (12-6).

_____ i. Verify pressing summary button takes you to P3 (12-6).

19. _____ Verbally verify accurate transmission of NBC report to Bn TOC using send function. Check report contents.

20. _____ Verbally verify accurate transission of NBC report to another CCD using send function. Check report contents.

21. _____ Verify copy of the reoprt sent appear in the NBC old file (11-5).

22. _____ Verify Shell report creation using the CCD (12-7).

_____ a. Verify entry of valid number (using the numeric keypad) and where information in report format (12-7).

_____ b. Verify post to map function correctly places icon on CCD map (11-6).

23. _____ Verbally verify accurate transmission of Shell report to Bn TOC using send function. Check report contents.

24. _____ Verbally verify accurate transmission of Shell report to another CCD using send funciton. Check report contents.

25. _____ Verify copy of the report sent appear in the Shell old file (11-5).

26. _____ Verify Spot report creation using the CCD (12-7).

_____ a. Verify entry of valid what (check icons for each type), where (by touch or lasing), and Heading information in report format (12-7).

_____ b. Verify entry of valid Enemy Act, Own Act, and As of (check options) information in report format (12-7).

_____ c. Verify post to map function correctly places icons on CCD map (12-7).

_____ d. Verify operation of Next, Cancel, and Back buttons (12-7).

_____ e. Verify item selection on P3 brings up the correct page for editing and replaces te next button with a SUMMARY button (12-7).

_____ f. Verify pressing summary butto takes you to P3 (12-7).

27. _____ Verbally verify accurate transmission of Spot report to Bn TOC using send function. Check report contents.

28. _____ Verbally verify accurate transmission of Spot report to another CCD using send funciton. Check report contents.

29. _____ Verify copy of the report sent appear in the Spot old file (11-5).

30. _____ Verify Sit Rep creation using the CCD (12-9).

_____ a. Verify entry of valid As of, FLOT (by touch or lasing), Enemy Act (check both option sets), Crit Shhort boxes, and Cdr Intent (check options) information in report format.

_____ b. Verify post to map function correctly places icons on CCD map (11-6).

_____ c. Verify operation of Next, Cancel, and Back buttons (12-9).

_____ d. Verify item selection on P3 brings up the correct page for editing and replaces the next button with a SUMMARY button (12-9).

_____ e. Verify pressing summary button takes you to P3 (12-9).

31. _____ Verbally verify accurate transmission of Sit Rep to Bn TOC using send function. Check report contents.

32. _____ Verbally verify accurate transmission of Sit Rep to another CCD using send function. Check report contents.

33. _____ Verify copy of the report sent appear in the Sit Rep old file (11-5).

34. _____ Verify the correct operation of the CANCEL button during reprot creation (12-9).

35. _____ Verify the correct opearation of the DELETE button while reviewing old messages. Note if posted icons disappear where appropriate (11-7).

36. _____ Verify the correct operation of the DELETE button in the old files (NOT from within a reprot) (11-7).

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

CVCC CCD MESSAAGE HANDLING OPERATOR'S CHECKLIST

Research Asst: _____ Date: _____
Simulator #: _____

	STATUS	ITEM	REMARKS
1.	_____	Verify incoming messages highlight the receive button and beep in the headset (11-3).	_____
2.	_____	Verify receive queue is correctly displayed (11-3).	_____
3.	_____	Verify correct operation of Prev Page and Next Page buttons to shift the queue up or down one screen of messages (11-3).	_____
4.	_____	Verify correct display of messages list information (i.e., 1-9/10) at top of receive queue ((11-3).	_____
5.	_____	Verify message headers display status, originator, rport type, posted icon indicator, and time (11-3).	_____
6.	_____	Verify incoming report icons appear on the CCD map and flash for 10 seconds fter message is received (11-3).	_____
7.	_____	Verify icons appearing off the CCD map place arrows along the map edge (11-3).	_____
8.	_____	Verify off-screen arrows display a 'tail' and the correct report icon when the arrow is touched on the CCD map (11-3).	_____
9.	_____	Verify icons are highlighted on the CCD map when the report is selected in the receive queue (11-3).	_____
10.	_____	Verify messages appear when the show button is pressed. Check the accuracy of contents including the sender/originator information.	_____
11.	_____	Verify received messages can be deleted while being viewed.	_____
12.	_____	Verify received messages can be deleted from the receive queue.	_____
13.	_____	Verify messages can be relayed higher or lower (11-4).	_____
14.	_____	Verify correct update of message status indicator when a message is read and/or relayed (11-4).	_____

15. _____ Verify duplicate messages do not appear in the receive queue. Duplicate messages include similar messages sent from different originators.

16. _____ Verify high priority messages appear in the receive queue before low prioriy messages. High priority messages include Contact, CFF, Adjust, Intel, and NBC reports.

17. _____ Verify more recent reports within a priority group appear higher in the queue than previously received reports.

18. _____ Verify messages "age" out of the receive queue after five minutes (Note: the CCD checks message age once per minute and removes reports older than five ONLY if the receive queue is not open) (11-3).

19. _____ Verify messages relayed or that aged out of the queue are moved to the old files (11-4).

20. _____ Verify show messages operation in old files. Icons should be displayed when header is selected (11-5).

21. _____ Verify delete function in old files (11-5).

22. _____ Verify "hot" icon functionality when the receive queue is open.

_____ a. When a posted icon is selected the message should be immediately displayed immediately after touching the "hot" icon.

_____ b. Messages currently in the receive queue or old files are displayed immediately after touching the "hot" icon.

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

CVCC CCD MAP FUNCTION OPERATOR'S CHECKLIST

Research Asst: _____ Date: _____
Simulator #: _____

	STATUS	ITEM	REMARKS
1.	_____	Verify map scale functions operate properly.	
	_____	a. All map scale options (1:25,000, 1:50,000, 1:125,000, and 1:250,000) display correctly (4-1).	
	_____	b. Record average time to change to any map scale (check each scale twice).	
2.	_____	Verify map features operate properly (4-2).	
	_____	a. All map features (Contour Lines, Grid Lines, Rivers, Roads, and Vegetation) selected or removed display correctly (4-2).	
	_____	b. Record average time to display or remove any feature (time display and removal for each feature once).	
3.	_____	Verify received overlays display correct message headers (5-1).	
4.	_____	Verify overlay show function displays overlay on CCD map (5-2).	
5.	_____	Verify overlays move to the old files after using the show function (5-2).	
6.	_____	Verify overlay headers correctly display a "*" only when the overlay is posted (5-5).	
7.	_____	Verify duplicate overlays handled porperly (5-1).	
8.	_____	Verify received overlay correctly display all objects from original overlay.	
9.	_____	Verify delete overlay function operates properly in the receive queue, in the overlay file, and in the overlay report (5-7).	
10.	_____	Verify selection of Jump from the CCD dedicated menu operates properly (6-2).	
	_____	a. Selecting Jump correctly displays eight "hot spots" on the CCD map (6-2).	
	_____	b. Selecting Jump correctly toggles the dedicated menu key to Follow (6-1).	

_____ c. Pressing a "hot spot" shifts the terrain displayed on the CCD map approximately 1/2 of a map screen in the correct direction (6-2).

_____ d. Record the average time to Jump in any direction (use four jumps).

11. _____ Verify Follow button on the CCD dedicated menu operates properly (Note: the correct "Home" position may not be the map center once move vehicle is used) (6-1).

12. _____ Verify selection of move vehicle box permits the tank icon and terrain to be relocated on the CCD map only when selected (1-2).

13. _____ Verify Unpost Icons function operaes properly (3-2).

_____ a. Icons selected by pointing are correctly highlighted on the CCD map (Note: if a report contains more than one icon, all of its icons are treated as a group) (3-2).

_____ b. Selecting older than options (5, 10, 30, or 180 minutes) correctly highlight appropriate icons on the CCD map (3-2).

_____ c. Selecting REMOVE ALL highlights all posted icons on the CCD map (3-2).

_____ d. Selecting RESET unhighlights any selected icons on the CCD map (3-2).

_____ e. Selecting UNPOST correctly removes highlighted posted icons from the CCD map (3-2).

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

CVCC CITV SYSTEM OPERATOR'S CHECKLIST

Research Asst: _____ Date: _____
Simulator #: _____

#	STATUS	ITEM	REMARKS
1.	_____	Verify application of CITV power using power switch (Note: CITV will cycle in standby for approx. 8 sec warmup) (14-2).	
2.	_____	Verify correct display of CITV out-the-window view. The view should be thermal (14-2).	
3.	_____	Verify operation of Polarity switch ccauses thermal view to toggle between white hot to black hot (15-4).	
4.	_____	Verify correct operation of the CITV/GPS switch (14-3).	
	_____	a. Verify commander's control handle is operating the main gun when switch set to GPS. The CITV view should not update (14-3).	
	_____	b. Verify commander's control handle is operating the CITV when set to GPS (14-3).	
5.	_____	Verify proper operationn of GLOS mode. CITV should be slaved to the main gun (18-1).	
	_____	a. Verify CITV slaved to main gun (18-1).	
	_____	b. Verify override of GLOS mode when holding in palm switch on control handle. This should permit maanual search (18-1).	
6.	_____	Verify proper operation of manual search mode (16-1).	
7.	_____	Verify proper operation of autoscan mode.	
	_____	a. Verify setting of right and left sectors using the sector set button, the control handle, and the left and righ four-way switches (17-2).	
	_____	b. Verify setting of scan rate using the rate set button and the top and bottom four-way switches (17-3).	

	_____	c. Verify override of autoscan mode when holding in the palm switch on control handle. This should permit manual search (17-3).	
8.	_____	Verify proper operation of the CITV laser (15-1).	
	_____	a. Verify correct range apears in CITV display when lasing (15-1).	
	_____	b. Verify correct operation of the IFF system when lasing to a target vehicle (15-2).	
9.	_____	Verify correct operation of the CITV target designate function. Pressing and holding the designate button should slew the main gun to the same view as the CITV display (15-5).	
10.	_____	Verify correct operation of the CITV 3X/10X toggle on the control handle. Make sure appropriate target reticle is displayed (15-3).	
11.	_____	Verify use of CITV laser range finder to input grid locations into CCD combat reports (15-1).	

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

DATA SHEET

CVCC SIMULATOR OPERATION

Simulator nr:_____

Enter OK or X		An Entry of "X" in Column 1 Requires a Comment in this Column.
	COMMANDER	
____	1. Vision devices all operate properly.	_____
____	2. Turret controls operate properly.	_____
____	3. Intercom operates properly.	_____
____	4. Radios (Set A & Set B) operate properly.	_____
____	5. Cupola controls operate properly.	_____
____	6. GPSE/Turret Override Operates.	_____
____	7. Ammo redistribute operates properly.	_____
____	8. Ambient Sound System OK.	_____
	GUNNER	
____	1. Vision devices all operate properly.	_____
____	2. Turret controls operate properly.	_____
____	3. Intercom operates properly.	_____
____	4. Radios (Set A & Set B) operate properly.	_____
____	5. 3x/10x power switch operates OK (daylight).	_____
____	6. 3x/10x power switch operates OK (daylight).	_____
____	7. Gun is boresighted OK.	_____
____	8. Ammo Selector Switch OK.	_____
____	9. Autoloader Functions properly.	_____
____	10. Footswitch functions properly.	_____
____	11. Ambient Sound system OK.	_____
____	12. Laser RF operates OK.	_____
	DRIVER	
____	1. Vision devices all operate properly.	_____
____	2. Steering controls operate properly.	_____
____	3. Intercom operates properly.	_____
____	4. Radios (Set A & Set B) operate properly.	_____
____	5. Engine starts and operates properly.	_____
____	6. All gauges and warning Lights OK.	_____
____	7. Parking and Service Brakes OK.	_____

8. ____ Automotive Performance OK. _____
9. ____ Pivot steer OK. _____
10. ____ Odometer OK. _____
11. ____ Ambient Sound system OK. _____

LOADER POSITION

1. ____ Intercom box allows monitoring both Sets A & B and Intercom. _____
2. ____ Loader's vision device works OK. _____
3. ____ RA's commo device to ECR works properly. _____

If any malfunctions were noted after the initial checkout, please explain in detail. Provide Grid location, nature of activity being performed, what exactly broke:_____

CREW Name _____
Name _____

Serial Nr. _____ Date _____

CVCC M1 SIMULATOR MOBILITY SYSTEM OPERATOR'S CHECKLIST

Research Asst: _____ Date: _____
Simulator #: _____

#	STATUS	ITEM	REMARKS
1.	_____	Verify correct initialization of the driver's out-the-window views.	
2.	_____	Verify correct operation of start-up procedures.	
3.	_____	Verify vehicle transmission and throttle operate properly.	
4.	_____	Verify correct operation of steering bar.	
5.	_____	Verify correct operation of speedometer.	
6.	_____	Verify vehicle can drive over rivers without getting stuck.	
7.	_____	Verify correct operation of the Thermal Mode switch on the gunner's main panel.	
8.	_____	Verify fuel guages work properly and initially are "full."	
9.	_____	Verify other guages and warning lights operate properly.	
10.	_____	Verify service brake operates correctly.	
11.	_____	Verify correct operation of the parking brake and release.	
12.	_____	Verify observation of other friendly vehicles, enemy vehicles, and artillery impacts.	

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

CVCC M1 SIMULATOR ARMAMENT AND AUTOLOADER OPERATOR'S CHECKLIST

Research Asst: _____ Date: _____
Simulator #: _____

#	STATUS	ITEM	REMARKS
1.	_____	Verify proper operation of the Gunner's control handle. This includes the palm switches, trigger, and activation of the laser range finder (LRF).	_____
2.	_____	Verify correct display of LRF return values visible in the GPS.	_____
3.	_____	Verify correct operation of the reticle brightness control.	_____
4.	_____	Verify GPS is properly boresighted. Also, check for "drift."	_____
5.	_____	Verify correct color and brightness adjustment of the GPS.	_____
6.	_____	Verify correct operation of the daylight 3X/10X toggle on the gunner's main panel.	_____
7.	_____	Verify correct operation of the Thermal Mode switch on the gunner's main panel.	_____
8.	_____	Verify correct operation of the CLR/SHTR/ FLTR switch on the gunner's main panel.	_____
9.	_____	Verify correct operation of the white hot/ black hot toggle on the gunner's main panel.	_____
10.	_____	Verify correct operation of the ammo select switch on the gunner's main paanel.	_____
11.	_____	Verify correct operation of the ammo redistribution controls at the TC station.	_____
12.	_____	Verify correct operation of the commander's control handle override and trigger. Make sure CITV is of set to GPS.	_____
13.	_____	Verify correct CVCC basic load (40 rnds total--27 Sabot, 13 HEAT).	_____
14.	_____	Verify "9" switch reloads correct CVCC basic load.	_____
15.	_____	Verify "kill suppress" function operates properly.	_____
16.	_____	Verify correct operation of the Turret-To-Hull reference indicator.	_____

17. _____ Verify Grid Azimuth button at the Comander's station and indicator displays correct orientation of the maain gun while the tank is stationary.

18. _____ Verify all other guages in the gunner's station operate properly.

19. _____ Verify all other guages in the commander's station operate properly.

_____
_____
_____
_____
_____
_____

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

CVCC M1 SIMULATOR SINCGARS OPERATOR'S CHECKLIST

Research Asst: _____ Date: _____
Simulator #: _____

#	STATUS	ITEM	REMARKS
1.	_____	Verify preset frequencies on A and B radios.	
2.	_____	Verify correct operation of channel select switch.	
3.	_____	Verify correct operation of manual select switch.	
4.	_____	Verify correct frequency is displayed in window of A and B radios (Note: if screen is blank, may need to press FREQ button).	
5.	_____	Verify RF power switch function operates properly.	
6.	_____	Verify voice communications with the Bn TOC is loud and clear.	
7.	_____	Verify voice communication with other simulators on A and B radios.	
8.	_____	Verify voice communication with the ECR (where appropriate).	
9.	_____	Verify voice communication with the SAF operators (where appropriate).	
10.	_____	Verify communication of digital messages using SINCGARS.	
11.	_____	Verify radio communication does NOT deteriorate during test event.	
12.	_____	Verify radio communication between any othr relevant stations is NOT lost unexpectedly.	

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

TACTICAL OPERATIONS CENTER WORKSTATION
CONFIGURATIONS

S-3 Workstation

Overlay Module
Message Module
S-3 Formats Module
Workbook Module
Concept of Operation Module
Operational Effectiveness Module
Task Organization Module

Commander's/Exec O Workstation

Concept of Operation Module
Overlay Module
Message Module
S-3 Formats Module
Operational Effectiveness Module
Task Organization Module

Combat Service Support Workstation

Logistics Module
Operational Effectiveness Module
Message Module
Workbook Module
Overlay Module
Utilities
SEND
CHECKPOINT

S-2 Workstation

Overlay Module
Message Module
S-2 Formats Module
Workbook Module

Fire Support Off. Workstation

Fire Planning Module
Overlay Module
Message Module
Workbook Module

DATA SHEET
System Management Operations

	Enter OK or NO		Job Aid Ref Page	COMMENT
WINDOWS				
1.	____	Active window frames a buff color when cursor is positioned inside window.	4	
2.	____	Pressing and holding left mouse button on title bar allows you to "drag" window to new location on screen. Releasing mouse button "drops" window at new location.	5	
3.	____	Pressing and holding left mouse button on window frame allows you to drag frame to varying sizes. Releasing mouse button expands/contracts window to designated size.	5	
4.	____	Clicking on minimize button stores the windows as a title bar.	6	
5.	____	Double clicking on the title bar restores the window.	6	
MENUS				
6.	____	Pressing mouse button when cursor is positioned over menu item activates the menu.	7	
7.	____	Pressing and holding button allows you to drag to selected sub-menu items.	7	
8.	____	Releasing mouse button activates selected window or function.	7	
9.	____	Clicking on menu button activates menu function options.	8	

DATA SHEET
Map Module Operations

	Enter OK or NO		Job Aid Ref Page	COMMENT
SCALING				
1.	___	Clicking on MAP menu and dragging to scales adjusts map screen accordingly.	10	
SCROLLING				
2.	___	Clicking on right mouse button allows you to scroll map by click, hold, drag, release of cursor on map screen.	10	
3.	___	Clicking CENTER HOME centers the map display on the Battalion TOC UTM coordinates.	10	
4.	___	Activating SCROLL BARS causes scroll bars to appear in lower and right portion of map display.	10	
5.	___	Click, hold, and drag scroll bars moves screen in appropriate direction.	10	
6.	___	Clicking on REMOVE SCROLL BARS causes scroll bars to disappear from screen.	10	
7.	___	Dragging and "bumping" created overlay objects against scroll edges causes screen to scroll (only in Edit mode).	10	
FEATURES				
8.	___	Clicking on FEATURES option activates feature menu options.	11	
9.	___	Clicking on each option and selecting Apply causes map screens to display selected feature.	11	

DATA SHEET
Overlay Operations

	Enter OK or NO		Job Aid Ref Page	COMMENT
CREATING OVERLAYS				
1.	____	Clicking on OVERLAYS activates pulldown menu.	13	
2.	____	Clicking on CREATE activates dialog box.	14	
3.	____	Clicking on "Name" box allows you type in a name.	14	
4.	____	Clicking CREATE in dialog box changes screen and activates overlay tools.	14	
POINTS OF INTEREST				
5.	____	Clicking on POINTS activates pull-down menu.	15	
6.	____	Clicking on desired point causes appropriate object to be displayed in Preview Box.	15	
7.	____	Clicking on desired location on map screen "drops" the object on the screen.	15	
ATTRIBUTES				
8.	____	With object displayed in Preview Box, selection of attributes causes object to change accordingly.	16	
UNIT SYMBOLS				
9.	____	Clicking on unit type (e.g. Armor, Infantry, etc.) activates pull-down menu.	16	
10.	____	Clicking on selected unit causes appropriate unit symbol to be displayed in Preview Box.	16	
11.	____	With unit symbol displayed in Preview Box, selection of attributes causes symbol to change accordingly. Reminder: Text entries require Return entry on keyboard.	16	
12.	____	Clicking on desired location causes unit symbol to drop on map screen.	16	

POLYGONS, LINES AND ARROWS

13.___	Clicking on selected object causes object to be displayed in Preview Box.	18	
14.___	Selection of attributes causes appropriate object changes.	18	
15.___	Clicking left mouse on map screen causes first point of selected object to be placed on map screen.	18,19	
16.___	Moving mouse to next location draws appropriate graphics component.	18,19	
17.___	Clicking middle mouse button terminates drawing capability with appropriate graphic displayed.	18,19	

OBJECTS

18.___	Clicking on object on map screen activates object menu.	20	
19.___	Clicking on empty space on map screen and dragging cursor allows you to box multiple objects.	20	
20.___	Clicking on empty space deactivates box.	20	
21.___	Selection of MOVE OBJECT on object menu allows you to drop object at a new location.	21	
22.___	Click, hold, drag, release with middle mouse button allows you to move object or point.	21	
23.___	Clicking on MOVE from GROUP menu allows you to move a group of boxed objects by clicking on left mouse button at a new location. Reminder: objects will remain grouped until deactivated by clicking on an empty space.	21	
24.___	Lines can be moved using the group move functions for objects.	22	
25.___	Selecting a group of objects and clicking on DUPLICATE from the GROUP menu causes duplicate objects to appear.	22	
26.___	Selecting DELETE OBJECT or DELETE LINE from object menu causes a confirmation dialog box to appear.	22	
27.___	Selecting DELETE from the GROUP menu causes a confirmation dialog box to appear.	22	

28.____	Selection of responses from the delete dialog boxes results in the appropriate response.	22	
29.____	Selecting EDIT ATTRIBUTES from the object menu causes the Attribute Box to appear.	23	
30.____	Entering changed attributes causes the object on the screen to change accordingly.	23	
31.____	Clicking on desired new location along a line or polygon and selecting MOVE UNIT SIZE from object menu causes unit size symbol to appear at the new location.	23	
32.____	Clicking on object and selecting BRING TO FRONT or BRING TO BACK causes appropriate response.	24	
33.____	Clicking on subordinate unit and selecting LINK TO from Object Menu allows you to move cursor to a superior unit symbol with an arrow displayed on the first symbol.	24	
34.____	Positioning arrow on the superior unit and clicking the left mouse button causes the linked object to disappear.	24	
35.____	Clicking on object and selecting HIERARCHY from Object Menu allows you to select and display higher or lower level units. (This function is available only when of object is linked.)	25	
36.____	Selecting UNLINK from the object menu causes the single unit symbol to reappear on the screen.	26	

CONTROL MEASURE LABELS

37. ____	Selecting MOVE LABEL from Object Menu allows you to drop or drag label to new location.	27	
38. ____	Selecting DELETE LABEL from Object Menu causes label to disappear.	27	

CONTROL MEASURE POINTS

39.____	Selecting ADD POINT from Object Menu causes a new point to appear next to point clicked.	28	

40.____	Clicking left mouse button at desired location causes new point to appear.	28	
41.____	Selection of MOVE POINT allows you to drop or drag a control point to a new location.	28	
42.____	Selecting DELETE POINT from object menu causes the point to disappear.	28	

SAVING OVERLAYS

43.____	Selecting SAVE TOP or SAVE ALL from the overlays menu saves the overlay to disk.	29	
44.____	Selecting DONE EDITING for an existing overlay causes a dialogue box to appear giving the choices to: SAVE, REMOVE, CANCEL. Reminder: if no changes to an overlay have been made, no dialogue box will appear.	29	

EDITING OVERLAYS

45. ____	Selection of SAVE, REMOVE, or CANCEL results in the appropriate response.	30	
46. ____	Clicking on EDIT OVERLAYS button from the Overlay Menu causes overlay edit menu to appear.	30	
47. ____	Desired modifications to the overlay can be made.	30	
48. ____	Selecting DONE EDITING from the Overlays Menu saves changes and returns you to the normal mode.	30	

DELETING OVERLAYS

49.____	Selecting DELETE from the overlays menu causes the overlay list to be displayed.	30	
50.____	Highlighting the desired overlay allows you to select: DELETE or CLOSE.	30	

STACKING

51. ___	Selecting POST TO MAP or POST TO Sit Disp from stacking menu and clicking on POST button causes appropriate response.	31	
52. ___	Selecting UNPOST FROM MAP or UNPOST FROM Sit Disp and clicking on UNPOST button causes appropriate response.	31	
53. ___	Selecting ROTATE UP or ROTATE DOWN causes appropriate response.	32	
54. ___	Selecting STACK provides a list of overlays in the stack.	32	
55. ___	Highlighting an overlay name and selecting TO TOP or TO BOTTOM causes appropriate response.	32	

COPYING OVERLAYS

56.___	Selecting COPY from overlays menu causes a list of overlays to appear.	33	
57.___	Clicking on ROLE box causes a list of overlays available on other workstations to appear.	33	
58.___	Highlighting desired Overlay and clicking on COPY button causes selected overlay to be added to your workstation file.	33	

SENDING OVERLAYS

59.___	Selecting SEND from the overlays menu causes a list of overlays to appear.	33	
60.___	Highlighting desired overlay, selecting desired instruction, and clicking on SEND causes appropriate response. (Confirm with destination simulators).	33	

DATA SHEET
Icon Operations

	Enter OK or NO		Job Aid Ref Page	COMMENT
AGGREGATION/DEAGGREGATION				
1. ____	Clicking on icon and selecting AGGREGATE from object menu activates pop-up menu.		34	_____
2. ____	Selection of menu options results in appropriate aggregation.		34	_____
3. ____	Changing map scales results in a corresponding change in aggregation.		35	_____
4. ____	Clicking and holding cursor on off-screen arrow causes a pull-down menu to appear.		35	_____
5. ____	Selecting Remove Arrow causes the arrow to disappear from the screen.			_____
6. ____	Selecting Go To causes the map display to center on the report icon.			_____
MESSAGE ICONS				
7. ____	Positioning cursor on message icon, selecting LINK TO, and clicking left mouse button on unit symbol causes icon to disappear. (In edit mode only.)		36	_____
8. ____	Clicking on unit symbol and selecting VIEW MESSAGES from object menu causes a folder outline to appear on the right-hand monitor.		37	_____
9. ____	Folder may be moved to desired location.		37	_____
10.____	Highlighting desired message and clicking on SELECTED in the View Message menu causes the message to be displayed.		37	_____
11.____	Selecting BRING TO FRONT or BRING TO BACK in the view message menu causes the message to be displayed.		37	_____

DATA SHEET
Message Module Operations

	Enter OK or NO		Job Aid Ref Page	COMMENT
MESSAGE OPERATIONS				
1.	____	Selecting RECEIVE FILTER from FILTER menu activates FILTER MESSAGES pop-up box.	39	
2.	____	Filter names toggle on and off.	39	
3.	____	Clicking APPLY returns you to current folder.	39	
4.	____	Your workstation receives no messages for which a filter is activated.	39,40	
5.	____	Your workstation receives all approrpiate messages not filtered.	39,40	
6.	____	Message lines are automatically displayed in your workstation In Folder's List Box.	39,40	
7.	____	Highlighting message line and clicking on SELECTED causes the MESSAGE VIEWER to appear with the appropriate message displayed.	40	
8.	____	Clicking on PREVIOUS or NEXT causes the appropriate message to be displayed.	40	
9.	____	Clicking on ROUTE button, selecting destination(s), and clicking SEND returns you to current folder.	40	
10.	____	Clicking on DELETE button causes selected message to be deleted.	41	
11.	____	Deleting messages from Map Display folder or SitDisp folder deletes icons from the map or SitDisp.	41	
12.	____	Clicking on COMPOSE and selection of message type causes the appropriate message "shell" to appear on the screen.	42	
13.	____	All information can be entered in the appropriate fields, i.e.: -Response Menus -Destination Options -Location Fields	43	
14.	____	An icon appears on the map when a location field is completed.	43	
15.	____	The icon disappears when the message is sent.	43	
16.	____	The Map Display/SitDisp is posted when message is sent to the respective folder(s).	43	

DATA SHEET
Folders and Workbook Operations

	Enter OK or NO		Job Aid Ref Page	COMMENT
INFOLDER				
1.	____	InFolder is displayed on right-hand monitor.	44	
2.	____	Frame turns a buff color when cursor is placed anywhere on window.	44	
3.	____	Clicking on message information line highlights the line in black with a yellow border.	44	
4.	____	Clicking on SELECTED button causes selected MESSAGE VIEWER to display in an adjacent window.	44	
5.	____	Clicking on NEXT button causes MESSAGE VIEWER to change to next later message on list.	44	
6.	____	Clicking on PREVIOUS button returns MESSAGE VIEWER to originally selected message.	44	
7.	____	Clicking on ROUTE button causes ROUTE MESSAGE window to display.	44	
8.	____	Clicking on DELETE button causes highlighted message to be deleted.	44	
9.	____	Clicking on FOLDER button activates pull-down menu.	44	
10.	____	Clicking on FILTER button activates pull-down menu.	44	
11.	____	Clicking on COMPOSE button activates pull-down menu.	44	
12.	____	Scroll bar functions properly.	44	
WORKBOOK				
13.	____	Selecting WORKBOOK from folder menu causes a Workbook pop-up menu to appear.	45	
14.	____	Highlighting of workbook title and selection of OPEN causes the workbook to open.	45	
15.	____	Selecting CREATE opens a dialogue box for entry of the workbook title. Clicking on the text box, typing in the overly name, and selecting CREATE adds the new workbook to the list.	45	

16.____	Selecting the DELETE option after highlighting deletes the selected workbook.	45	_____
17.____	Selecting the CLOSE option closes the workbook.	46	_____

REMOTE STATIONS

18.____	Selecting REMOTE from the folder menu causes a list of folders to appear.	46	_____
19.____	Clicking on ROLE/ID button allows selection of remote workstation.	46	_____

DATA SHEET
Format Module Operations

	Enter OK or NO	Job Aid Ref Page	COMMENT
FORMAT MANAGER WINDOW			
1. ___	The format manager window displays all available reports in a list box.	47	
CREATING REPORTS			
2. ___	Highlighting desired report type in the format manager window and clicking on CREATE button causes a dialogue box to appear.	48	
3. ___	Typing in the name, and clicking on CREATE causes the FORMAT VIEWER to appear.	48	
4. ___	Clicking in the window allows you to type changes/enter text to the report.	48	
5. ___	Clicking on the SAVE button saves the report and adds it to the FORMAT MANAGER WINDOW.	48	
EDITING REPORTS			
6. ___	Selecting format type from the FORMAT MANAGER WINDOW, highlighting desired report, and clicking on OPEN allows you to change text.	49	
7. ___	Selecting SAVE or CLOSE (witout saving) causes the appropriate response.	49	
COPYING REPORTS			
8. ___	Selecting format type from the FORMAT MANAGER WINDOW, highlighting desired report, and clicking on COPY allows you to enter the report name. Clicking on COPY copies the report.	49	

DELETING REPORTS

9. ___	Selecting format type from the FORMAT MANAGER WINDOW, highlighting desired report, and clicking onDELETE button causes a confirmation dialogue box to appear.	50	_____
10.___	Selecting options in dialogue box causes the appropriate response.	50	_____

LEAVING THE FORMAT VIEWER

11.___	Selecting CLOSE returns you to the FORMAT MANAGER WINDOW.	50	_____

DATA SHEET
Concept of Operations (COO) Module Operations

	Enter OK or NO		Job Aid Ref Page	COMMENT
COO OVERLAY				
1. ___		Highlighting COO and clicking on Create results in a set of special COO commands displayed at the bottom of the screen.	51	_____
IMPORTING A TASK ORGANIZATION				
2. ___		Clicking on Import TO causes a battalion unit symbol to be displayed. Reminder: a battalion symbol automatically displays with selection of the COO.	51	_____
3. ___		Clicking on the battalion unit symbol with the left mouse button causes a pull-down menu to appear.	51	_____
4. ___		Selection of the desired echelon results in the display of the appropriate unit symbols.	51	_____
ADDING PHASES				
5. ___		Icons can be positioned as desired by using the click, hold, drag, release routine.	52	_____
6. ___		Selection of new or insert results in new phase icons displayed slightly offset from original icons.	52	_____
7. ___		New icons can be moved to desired locations as in #5 above.	52	_____
SETTING CURRENT PHASE				
8. ___		Adding a new phase using New or Insert command results in the newly created phase becoming the current phase. (Dark line unit symbols).	53	_____

9. ___	Using the Select Slide buttons causes the selected phase to become the current phase. (Dark line unit symbols).	53	

DELETING PHASES

10.___	Selecting the Delete button deletes all icons from the current phase.	53	
11.___	Selecting Delete on the Object Menu of a specific unit deletes that unit. Reminer: only when using Group menu pull-down after grouping objects.		
12.___	Ghost icons disappear when the cursor is clicked on Hide Phases.	54	
13.___	All icons (ghost and current) are displayed when the cursor is clicked on Show Phases.	54	

BRIEFING COO OVERLAYS

14.___	Clicking on arrow buttons on the Select Phase slides steps through the overlay one phase at a time.	53	
15.___	Dragging slider with the cursor moves throught the phases when the mouse button is released.	54	

DATA SHEET

Task Organization/Operational Effectiveness (TO/OE) Module Operations

	Enter OK or NO		Job Aid Ref Page	COMMENT
MODULE OPERATIONS				
1.	____	Highlighting desired unit and clicking on summary box causes a summary pop-up viewer to appear.	56	
2.	____	The quadrants in the status circle charts display the applicable colors.	56	
3.	____	Highlighting the desired unit and clicking on the Ammo box causes an ammunition pop-up menu to appear.	57	
4.	____	The bar graphs display the correct information and color coding--you must verify this with the simulators.	57	
5.	____	The functionality for Equipment, Fuel, and Personnel follows the same sequence as #3 and #4 above.	58,59 60	

DATA SHEET
Fire Support Module Operations

	Enter OK or NO	Job Aid Ref Page	COMMENT
TARGET REFERENCE POINTS (TRPs)			
1. ___	Using the "Creating points of interest" techniques outlined on page 15 of the job aid, you can "drop" a TRP at a desired location.	61	
FIELD ARTILLERY/MORTAR POSITIONS			
2. ___	Selecting HOWITZER from the Fire Support pull-down menu causes a howitzer symbol to appear in the Preview Box.	62	
3. ___	Selecting Add Range Fans for the Map pull-down menu causes a range fan to be displayed in the preview box.	62	
4. ___	Typing in desired labels and rotation causes the appropriate entry to be displayed in the preview box.	62	
5. ___	Dropping the howitzer symbol on the map results in the appropriate display.	62	
TARGET PROCESSING			
6. ___	Selecting CFF from the Compose menu pull-down causes the CFF Message Composer to appear.	63	
7. ___	Clicking the cursor on the What window causes a pull-down menu to appear.	63	
8. ___	Selection of a category from the pull-down menu results in that category being displayed in the What window.	63	
9. ___	Clicking the cursor on the map results in the appropriate symbol being displayed and the corresponding UTM coordinates to appear in the Where window.	63	

10.___ If the target is within 200m of a TRP, the number is automatically displayed in the CONCERN # window. NOTE: only when NOT in the editing mode.

63 _____

DATA SHEET
Situation Display Operations

	Enter OK or NO		Job Aid Ref Page	COMMENT
DISPLAY MONITOR				
1. ____	Selecting Post to Sit Disp from the Stacking pull-down menu causes the overlay to be displayed on the Sit Disp.		64	_____
2. ____	Selecting Sit Disp (M2) from the Route Messages pop-up menu in the InFolder results in the message being displayed on the Sit Disp.		64	_____
3. ____	Friendly vehicle icons are automatically posted to the Sit z. You must confirm this with individual simulators.		64	_____

DATA SHEET
Printer Operations

	Enter OK or NO		Job Aid Ref Page	COMMENT
SYSTEM OPERATIONS				
1.	____	The Ready light on the printer mouse is green.	65	_____
2.	____	When the center button on the printer mouse is despressed, the Printing light turns amber and the printer begins printing. NOTE: the amber light should go out after a few seconds and you may then manipulate the screen.	65	_____
3.	____	When printing is complete, the Ready light illuminates green.	65	_____
4.	____	The document printed is a picture of the screen active at the time of printing.	65	_____

DATA SHEET
Stealth Vehicle Operation

	Enter OK or X		An entry of "X" in column 1 requires a comment in this column.
1.	____	Stealth Initialization function operate properly.	_____
2.	____	PVD functions (scale, terrain features, etc.) operate properly.	_____
3.	____	Teleport functions operate properly.	_____
4.	____	Tether to vehicle functions operate properly.	_____
5.	____	Manual movement functions operate properly.	_____
6.	____	Placement at a location by keyboard input.	_____
7.	____	Verify movement on ground only.	_____
8.	____	Data Logger playback functions operate properly.	_____

If any malfunctions were noted after the initial checkout, please explain in detail. Provide Grid location, nature of activity being performed, what exactly broke:_____

_____

_____

_____

_____

_____

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_____

_____

_____

Operator Name: _____

Serial Number: _____ Date: _____

STANDALONE SINCGARS
OPERATOR'S CHECKLIST

Operator:_____ Date:_____

R/T #:____ Host Name:_____ TOC ECR

(Circle Location)

#STATUS	ITEM	REMARKS
1.___	Verify preset frequencies	_____
2.___	Verify channel select switch function	_____
3.___	Verify manual select switch function	_____
4.___	Frequency displays in window when FREQ button is pressed	_____
5.___	Verify RP power switch function	_____
6.___	Verify commo with TOC	_____
7.___	Verify commo with sims	_____
8.___	Verify commo within ECR	_____

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

_____

_____

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_____

BLUFOR SAF WORKSTATION
OPERATOR'S CHECKLIST

Workstation Name: _____ Date: _____

Host (MIPS) Name: _____ Operator: _____

#	STATUS	ITEM	REMARKS
		Initialization Functions	
1.	___	Verify WS is logged in as CVCC (if not, inform technician).	
2.	___	Connect to host successful.	
3.	___	Workstation successfully reads configuration data.	
4.	___	Verify battle scheme operation and select **Relative**.	
5.	___	Verify WS alignment operation and select **Mixed**.	
6.	___	Verify Battle View operation and select **Commander**.	
7.	___	Verify Marksmanship Change operation and select **Yes**.	
8.	___	Verify Battalion Number operation and select 1.	
9.	___	Select RESTORE EXERCISE, verify list of saved exercises, select exercise to restore, verify loading.	
10.	___	When exercise loads, verify Rules of Engagement operation	
11.	___	Verify correct pending tasks loaded (subordinate unit tasking).	

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

_____

_____

_____

_____

_____

Mission Execution Functions

1.____ Ensure units are set to report to SIMNET LAN. _____
2.____ Verify "Execute Overlay" function. _____
3.____ Verify "Halt" unit function. _____
4.____ Verify "Follow vehicle" function. _____
5.____ Verify "Command from simulator" function. _____
6.____ Verify "Go to location" function. _____
7.____ Verify "Change speed" function. _____
8.____ Change formation and verify response. _____
9.____ Enable fire parameters, and verify Fire at will. _____
10.____ Verify acquisition and engagement of OPFOR (within range). _____
11.____ Change CIS and verify response. _____
12.____ Verify cancel overides function. _____
13.____ Verify resume mission function. _____
14.____ Verify resume subordinates function. _____
15.____ Verify "radio on" and proper message log operation. _____
16.____ Verify message log control functions. _____

Interoperability Factors

1. ____ BLUFOR vehicle icons visible on PVD. _____
2. ____ BLUFOR vehicle icons visible from manned sims. _____
3. ____ BLUFOR vehicle icons visible on SIM, TOC and ECR workstations. _____
4. ____ BLUFOR vehicles visible on stealth PVD and panoramic monitors. _____
5. ____ OPFOR vehicles with LOS visible on WS map screen. _____
6. ____ BLUFOR vehicles engage/damage/destroy OPFOR (gunnery targets and/or SAF). _____
7. ____ BLUFOR vehiclesengaged/damaged/ destroyed by OPFOR. _____
8. Verify receipt of reports, as generated by SAF:

Sims	ECR WS	Listen	Type Report	Remarks
____	____	____	CONTACT	_____
____	____	____	SPOT	_____
____	____	____	SHELL	_____
____	____	____	AMMO	_____
____	____	____	SITREP	_____
____	____	____	INTEL	_____

NOTE: *Do not clear units/overlays until exercise is checkpointed.*

9. ____ Clear units and overlays function clears workstation, and clears units from net (verify with PVD). _____

10.____ Exercise restores from checkpoint file (see battlemaster functions, items 10,11). _____

Remarks. Use the space below to note additional problems encountered after initial checkoout, or if additional space is needed.

OPFOR SAF WORKSTATION
OPERATOR'S CHECKLIST

Workstation Name: _____ Date: _____

Host (MIPS) Name: _____ Operator: _____

#	STATUS	ITEM	REMARKS
		Initialization Functions	
1.	___	Verify WS is logged in as CVCC (if not, inform technician).	
2.	___	Connect to host successful.	
3.	___	Workstation successfully reads configuration data.	
4.	___	Verify battle scheme operation and select **Relative**.	
5.	___	Verify WS alignment operation and select **Mixed**.	
6.	___	Verify Battle View operation and select **Commander**.	
7.	___	Verify Marksmanship Change operation and select **Yes**.	
8.	___	Verify Battalion Number operation and select 30.	
9.	___	Select RESTORE EXERCISE, verify list of saved exercises, select exercise to restore, verify loading.	
10.	___	When exercise loads, verify Rules of Engagement operation	
11.	___	Verify correct pending tasks loaded (subordinate unit tasking).	

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

_____

_____

_____

_____

_____

Mission Execution Functions

1.____ Verify "Execute Overlay" function.
2.____ Verify "Halt" unit function.
3.____ Verify "Go to location" function.
4.____ Verify "Change speed" function.
5.____ Change formation and verify response.
6.____ Enable fire parameters, and verify **Fire at will** indication.
7.____ Verify acquisition and engagement of BLUFOR (within range).
8.____ Change CIS and verify response.
9.____ Verify cancel overides function.
10.____ Verify resume mission function.
11.____ Verify resume subordinates function.
12.____ Verify "radio on" and proper message log operation.
13.____ Verify message log control functions.

Interoperability Factors

1. ____ OPFOR vehicle icons visible on PVD.
2. ____ OPFOR vehicle icons visible from manned sims.
3. ____ OPFOR vehicles visible on stealth PVD and panoramic monitors.
4. ____ BLUFOR vehicles with LOS visible on WS map screen.
5. ____ OPFOR vehicles engage/damage/destroy BLUFOR (gunnery targets and/or SAF).
6. ____ OPFOR vehiclesengaged/damaged/ destroyed by BLUFOR.

NOTE: *Do not clear units/overlays until exercise is checkpointed.*

7. ____ Clear units and overlays function clears workstation, and clears units from net (verify with PVD).
8. ____ Exercise restores from checkpoint file (see battlemaster functions, items 10,11).

Remarks. Use the back of this sheet to note additional problems encountered after initial checkoout, or if additional space is needed.

SAF PROBLEM REPORT SHEET

Operator: _____ Date: _____

Configuration Information.

Symbolics Workstation: _____ Simulation Host: _____
WS Battle Scheme: __Absolute __**Relative**
WS Alignment: __US __USSR __Offense __Defense __**Mixed**
Battle View: __**Commander** __Omniscient
Marksmanship Change Permission: __**Yes** __No
Bn #: __ Stealth Options: Site #: __ Host #: __

Commands/Functions Reference Numbers

1. Battlemaster Operations.

1.1 Workstation Options.
1.2 SAF vehicles placement.
1.3 Value menu settings.
1.4 Clear all.
1.5 Clear specified SAF unit.*
1.6 Save/Retrieve units.*
1.7 Load SAF exercise.*
1.8 Delete unit.*
1.9 Teleport unit.*
1.10 Create units on network.

2. Operations Order Activities.

2.1 Save/load overlay.*
2.2 Get status information.*
2.3 Save SAF exercise.
2.4 Perform TAC/E command.*
2.5 Perform overlay operations.*
2.6 Perform subord unit task.*
2.7 Perform task organization (global) tasking.

3. Map display functions.

3.1 Pan.
3.2 Obtain elevation/coordinates.
3.3 Zoom in/out.
3.4 Change scale.
3.5 Change terrain features.
3.6 Check veh status from map screen.*
3.7 Perform TAC/E command from map screen.*

4. Control measure functions.

4.1 Create route.
4.2 Assign control measure.
4.3 Assign CIS @ cntrl msr.
4.4 Create point.
4.5 Create line.
4.6 Create area.
4.7 Create zone.

5. Communication functiions.

5.1 SAF message log operation.
5.2 Radio communication.
5.3 CIG/simulator initialization.
5.4 Restore ammo controls.

6. Miscellaneous.

6.1 Keyboard input/command.*
6.2 Other.*

* Specify command attempted, unit and/or parameters selected, as appropriate.

Time	**Ref #**	**Details of Malfunction** (# of vehicles in operation, # vehicles on net, exercise/overlay being executed, ets.)	**Corrective Action** (Time corrected, Technician, Diagnosis if known)

Time	Ref #	Details of Malfunction	Corrctive Action

Use the space below to enter any other comments.

Plan View Display
Operator's Checklist

Operator: _____ Date: _____
PVD #: _____ Name: _____

#	STATUS	ITEM	REMARKS

Top Menu 1 Functions

1.	___	Verify PVD program termination	_____
2.	___	(^C).	_____
		Verify PVD program activation	_____
3.	___	(PVD).	_____
4.	___	Verify map manipulation functions.	_____
5.	___	Verify map tools function.	_____
6.	___	Verify intervisibility functions.	_____
		Verify event flagging functions.[1]	

Top Menu 2 Functions

1.	___	Verify map features function.	_____
2.	___	Verify Icon size function.	_____
3.	___	Verify Grid Intervals function.	_____
4.	___	Verify Contour Intervals function.	_____
5.	___	Verify intervisibility options function.	_____
6.	___	Verify map information functions.	_____

Overlay Menu Functiions

1.	___	Verify list overlays function.	_____
2.	___	Verify read from files function.	_____

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

_____
_____
_____
_____
_____

[1]Verify flagging between PVDs.

MCC REMOTE/SCC WORKSTATION OPERATOR'S CHECKLIST

Operator: _____ Date: _____

#	STATUS	ITEM	REMARKS

NOTE: Before proceeding with checklist, chek with technicians and coordinate with control staff to ensure other check-out operations are not affected. Ensure PVD is up and set to exercise 3 to verify vehicle placements.

SCC Terminal

1.	___	Verify end exercise function.	_____
2.	___	Verify exercise initialization sequence (initialize in relative mode, with HQ tank sectiion, TOC, mort plt and 3 btys of Howitzers).	_____
3.	___	Verify simulator allocation function.	_____
4.	___	Verify vehicle placement function.[1]	_____
5.	___	Verify fire support initialization function.[2]	_____
6.	___	Verify TOC placement function.[3]	_____
7.	___	Verify simulator reconstitution.[1]	_____
8.	___	Verify gunnery target placement.[3]	_____
9.	___	Verify save gunnery targets to file function.	_____
10.	___	Verify load gunnery targets from file.[3]	_____

MCC Remote Terminal

1.	___	Verify command list ("?" + enter).	_____
2.	___	Verify files list ("list" + enter).	_____
3.	___	Verify save simulator status function.	_____
4.	___	Verify restore simulator status function.	_____

Checkpoint Utility

NOTE: *Coordinate with TOC, Tech Spt, simulator personnel and SAF operators.*

___ Verify list overlays function. _____

Remarks. Use the back of this form to note additional problems encountered after initial checkout, or if additiional space is needed.

[1]Coordinate with tech spt when placing/reconstituting sims in CVCC mode. Verify locations on PVD.

[2]Verify locations on PVD, FSE workstation initialization with TOC/FSO.

[3]Verify placement on PVD.

BATTALION SEND UTILITY OPERATOR'SCHECKLIST

Research Asst: _____ Date: _____
Simulator #: _____

#	STATUS	ITEM	REMARKS
1.	_____	Verify real-time transmission of Contact report using CVCC-Send.	_____
2.	_____	Verify real-time reception of Contact report by Bn TOC WSs. Check accuracy of message content.	_____
3.	_____	Verify real-time reception of Contact report by simulator CCDs. Check accuracy of message content.	_____
4.	_____	Verify real-time transmission of CFF report using CVCC-Send.	_____
5.	_____	Verify real-time reception of CFF report by Bn TOC WSs. Check accuracy of message content.	_____
6.	_____	Verify real-time reception of CFF report by simulator CCDs. Check accuracy of message content.	_____
7.	_____	Verify real-time transmission of Adjust (Fire) report using CVCC-Send.	_____
8.	_____	Verify real-time receptiion of Adjust (Fire) report by Bn TOC WSs. Check accuracy of message content.	_____
9.	_____	Verify real-time reception of Adjust (Fire) report by simulator CCDs. Check accuracy of message content.	_____
10.	_____	Verify real-time transmission of Intel report using CVCC-Send.	_____
11.	_____	Verify real-time reception of Intel report by Bn TOC WSs. Check accuracy of message content.	_____
12.	_____	Verify real-time reception of Intel report by simulator CCDs. Check accuracy of message content.	_____
13.	_____	Verify real-time transmission of Spot report using CVCC-Send.	_____
14.	_____	Verify Real-time reception of Spot report by Bn TOC WSs. Check accuracy of message content.	_____

15.	_____	Verify real-time reception of Spot report by simulator CCDs. Check accuracy of message content.	_____
16.	_____	Verify real-time transmission of Sit Rep using CVCC-Send.	_____
17.	_____	Verify real-time reception of Sit Rep by Bn TOC WSs. Check accuracy of message content.	_____
18.	_____	Verify real-time reception of Sit Rep by simulator CCDs. Check accuracy of message content.	_____
19.	_____	Verify real-time transmission of Free Text report using CVCC-Send.	_____
20.	_____	Verify real-time reception of Free Text report by Bn TOC WSs. Check accuracy of message content.	_____
21.	_____	Verify real-time reception of Free Text report by simulator CCDs. Check accuracy of message content.	_____
22.	_____	Verify correct operation of "batch loading" files of combat reprots using CVCC-Send.	_____
23.	_____	Verify correct operation of report files used to send messages in real-time.	_____
24.	_____	Verify all digital reports received and printed by CVCC-Listen terminal.	_____
25.	_____	Verify all messages received by Data Logger.	_____

Remarks. Use the space below to note additional problems encountered after initial checkout, or if additional space is needed.

BATTALION CHECKPOINT UTILITY OPERATOR'SCHECKLIST

Research Asst: _____ Date: _____
Simulator #: _____

#	STATUS	ITEM	REMARKS
1.	_____	Verify exercise menu exists on coordinator workstation.	
2.	_____	Verify exercise checkpoint function successfully saves all TOC WSs, M1 simulators, and SAF WSs sharing the same exercise ID. Make sure no simulator or WS crashed during the save process.	
3.	_____	Verify exercise restart successfully restores all TOC WSs, M1 simulators, and SAF WS on the network. Make sure each system is operational following the restart.	
4.	_____	Verify exercise delete function removes the selected checkpoint file from the WS.	

Remarks. Use the space below to note additional problems encountered after initial checkkout, or if additonal space is needed.

DATA SHEET

VIDEO CAMERA AND RECORDING EQUIPMENT OPERATION

	ENTER OK or X	**An entry of "X" in column 1 requires a comment in this column.**
Functions		
1._____	All video cameras have been positioned properly.	_____
2._____	Verify accuracy of time/date settings.	_____
3._____	Record function operates properly.	_____
4._____	Playback function operates properly.	_____
5._____	Audio playback operates properly.	_____

If any malfunctions were noted after the initial checkout, please explain in detail. Provide Grid location, nature of activity being performed, what exactly broke:_____

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Operator Name: _____

Serial Nr. _____ Date: _____

DATA SHEET

RA COMMUNICATIONS DEVICES OPERATION

	ENTER OK or X	An entry of "X" in column 1 requires a comment in this column.
1._____	Verify OFF-PTT-VOX switch set to PTT (push to talk).	_____
2._____	Volume control operates properly.	_____
3._____	Communication to ECR loud and clear.	_____
4._____	Communication to Floor Monitor loud and clear.	_____
5._____	Communication to other RAs loud and clear.	_____

Interoperability Functions

1._____	Communication between RA commo devices does not interfere with other (ethernet)communication devices.	_____

If any malfunctions were noted after the initial checkout, please explain in detail. Provide Grid location, nature of activity being performed, what exactly broke:_____

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Operator Name: _____

Serial Nr. _____ Date: _____

DATA SHEET

DATA LOGGER OPERATION

	ENTER OK or X	An entry of "X" in column 1 requires a comment in this column.
Functions		
1._____	Recording function operates properly.	_____
2._____	Playback function operates properly with PVD.	_____
3._____	Playback function operates properly with SINCGARS.	_____
4._____	Playback function operates properly with STEALTH veh.	_____
5._____	Data Analysis extracts simulator, SAF SINCGARS and event flag data (from PVD and laptop).	_____

If any malfunctions were noted after the initial checkout, please explain in detail. Provide Grid location, nature of activity being performed, what exactly broke:_____

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Operator Name: _____

Serial Nr. _____ Date: _____

APPENDIX B

THE CVCC FUNCTIONAL TEST

The CVCC Functional Test

PURPOSE

The purpose of the CVCC Functional Test was to determine the:

1. Adequacy of the simulators and associated CVCC hardware for the conduct of the formative evaluations.

2. Functionality and robustness of the CVCC simulation software for the Commander's Independent Thermal Viewer (CITV), Command and Control Display (CCD), Tactical Operations Center (TOC) Workstations, SINCGARS, and CVCC Utility Programs.

3. Overall readiness of the simulation system for the conduct of the CVCC formative evaluations.

FUNCTIONAL TEST SUMMARY

1. The test plan for the CVCC simulation functional test describes the manner in which the functional test was conducted. The attached checklists have been updated to correct and clarify the initial draft checklists used during the functional test.

2. The functional test for the Combat Vehicle Command and Control (CVCC) simulator involved a number of complex software modules which were functionally evaluated. The CVCC Functional Test utilized teams of research assistants and soldiers to evaluate the functional capabilities of the various simulator systems: a team evaluated the TOC workstations and communications; a team evaluated the SAFOR workstations, systems, and communications; ECR personnel evaluated the utility programs and workstations, the Exercise Control Room (ECR) communications, and the other ECR equipment. The test was conducted in two phases. Phase One was conducted as a methodical, detailed, functional test of the individual hardware systems and their associated software for the modified M-1 simulators, tactical operations center, semi-automated forces, and control network to insure all aspects of the network were ready for the conduct of scenario and data collection exercise events. Phase Two utilized a scenario rehearsal and data collection exercise rehearsals in order to load the simulation network systems at a level which was essentially the same as that for the actual formative evaluations. A side benefit associated with both phases was the additional training provided to the research assistants who had completed CVCC orientation and training the prior week and who will participate in the forthcoming formative evaluations.

a. Phase 1. This phase was primarily checkouts of equipment functionality by causing each modules of the total system to perform its design functions with the module configured as it will be for the formative evaluation. The phase was conducted with the TOC staff controlling and recording the actions of the simulator mounted teams as they checked out the functioning of each

separate simulator mounted module. The TOC workstation modules also were functionally checked out during this period. Both voice and digital message traffic was passed in both directions to stress the simulation network and to insure that each functional module was thoroughly checked out. The ECR staff and the SAFOR staff conducted functional evaluations of the simulation systems programs, CVCC utility programs, and the SAFOR (both BLUFOR and OPFOR) during this phase. The ECR staff placed MCC target vehicles on the terrain to support checkouts of the CVCC simulator systems; the BLUFOR also utilized tethering to the CVCC simulators during this phase.

b. Phase 2. The activity used a scenario context and also used data collection exercises, in both cases controlled by the exercise director, in order to emulate activities, program and network stress anticipated during the CVCC formative evaluations.

c. Checklists were used to guide module checkouts and time was allotted each day to conduct debriefing and for filling out checklists and problem reports to provide information on any discrepancies noted.

3. The use of eight simulator teams allowed comparison of the same systems in each of the simulators by several independent teams which provided a more thorough evaluation of these systems. The battalion tactical operations center, the semiautomated forces and the exercise control room teams were charged with the functional evaluation of the systems which they will use during the formative evaluations.

4. Personnel requirements for the test, in addition to the site staff and the technicians, were: eight (8) research assistants (RAs) and eight (8) soldiers as teams to check out tank simulator systems; two (2) research assistants to conduct TOC workstation testing; and three (3) research assistants to conduct testing on the SAFOR. Some of the research assistants were cross-trained during the test to provide trained back-up personnel during the formative evaluation. The breakout of teams is shown in Appendix A.

5. Network Configuration. The network configuration used for the functional test is identical with the network as it will be for the Formative Evaluation.

a. Prior to and during the functional test an engineer was present to evaluate problems which were encountered.

b. For each day of the functional test the network configuration was as follows:

(1). CVCC simulators were initialized in full CVCC mode.

(a) CITV without target stacking and auto target tracking.

(b) CCD with touch screen and Commander's Handle cursor control operational.

(c) POSNAV and Driver's Steer-to display activated.

(d) Autoloader enabled. Ammunition basic load - 40 rounds. (Sabot - 27 rounds, HEAT - 13 rounds).

(e) SINCGARS configured as for the formative evaluation.

(2). Four workstations (S-2, S-3, FSO, CO/XO) were located in the TOC. The color printer was connected to the S-3 (Operations) and the S-2 (Intelligence) workstations. The large screen Situation Display was located in the TOC and was able to be posted from any of the workstations. The CSS workstation was located in the Exercise Control Room and was on the TOC local area network.

(3). The three SAFOR terminals were located in the Exercise Control Room (ECR). One of the SAFOR terminals was devoted to the OPFOR; two SAFOR terminals were utilized for the BLUFOR semi-automated forces. The BLUFOR terminals were operated with the Commander's view setting only and were configured as follows:

(a) Gunnery Proficiency - Competent (DCE#3 - Novice).

(b) Detection Range - 3500 meters

(c) Open fire Range - 2500 meters (DCE#1 - 2000 meters; DCE#3 - 2200 meters)

(d) Company D of the battalion was 100% SAFOR.

(e) The Battalion Scout Platoon was configured as two sections of three (3) Bradleys each. (SAFOR workstation in Commander's View).

[i] Gunnery Proficiency - Novice (DCE#3 - Master).

[ii] Detection Range - 3500 meters.

[iii] Open Fire Range - Test 2 & 3 - 3000 meters; Test 1 & 4 - 2000 meters.

(4). The Stealth was not available on the network.

(5). The minicams and video tape recorder were operational.

6. Test Results and Findings.

This section presents a summary of the results of the functional testing and discusses the findings. A table is also provided that lists each deficiency reported during the test, assigns a priority for fixes,indicates which agency is responsible for the correction of these deficiencies, and the status of those deficiencies as of the date of this report.

a. CVCC Simulators. The CVCC simulators operated with fewer problems than were noted during the baseline evaluation. The main items reported pertained to:

(1) Calibration and adjustment of the color monitors. Both vision device and the CCD color monitors displayed varying color calibration even when the monitors were side by side. All of the CCD monitors had been removed for shipment to the factory for modification. They now require minor adjustments to insure they are properly aligned for use.

(2) Minor problems were experienced with the Driver's

Steer-to-Display.

(3) Sound system problems similar to those encountered in previous tests were noted on two occasions but they could not be replicated.

b. SINCGARS. Minor problems (loose cables, etc) were encountered with the SINCGARS during the test but overall performance of the radio simulators appears much improved. However, it appears imperative that the radio simulators be started fresh from a power off state for each days testing. When that was done during the testing, little difficulty with communications was experienced.

c. CCD displays. Generally functioned well.

(1) The major problem encountered with the CCD was slow update of the current location data. The vehicle icons and the map updated properly but information in the location box did not.

(2) Three different cursor configurations were used (A white X cursor, a black X cursor, and a slanted small black arrow cursor). The black X cursor was preferred unanimously by the research assistants.

(3) As noted in paragraph a (2) above, some of the CCD displays were not properly adjusted. It was difficult to utilize the touch screens along the left edge due to the location of the monitor in it's mount.

(4) Route file transmission for the POSNAV system did not operate properly. This problem is assigned priority 1 for a software fix prior to the formative evaluations.

(5) Software corrections needed are shown in a list. References to specific simulators are shown in the spreadsheet.

d. CITV. Some problems surfaced with the operation of the CITV. The autoscan feature tends to lock up at the right hand scan limit when autoscan is initiated under certain conditions. There is a workaround which releases the scan: Switch to manual scan and move the search head slightly inside the scan limit. Then restart the autoscan and it will work correctly. No change has been made in the startup of the CITV which shows a blue sky in the view. Toggling the White Hot/Black Hot switch returns the view to it's correct coloration.

e. TOC Workstations.

(1) All TOC workstation modules generally functioned well. All modules are available at each of the workstations all the time. This precludes configuring each workstation to a specific staff position. This is not a significant problem however it is desirable that it be corrected.

(2) Software corrections needed are shown in the list.

f. Semi-Automated Forces (SAFOR). Only minor problems were encountered with the

SAFOR. The entire test was run using only two of the MIPS computers due to the non-availability of one machine. This configuration may have contributed to the problems encountered. The third MIPS computer will be available for the formative evaluations.

g. Utility programs. The SEND and CHECKPOINT utility programs on the Combat Service Support TOC workstation operated well with no noted deficiencies. The LISTEN program which is on a MacIntosh/Masscomp combination operated properly for the CVCC network.

h. Stealth Vehicle. The Stealth Vehicle was not available for the functional test.

i. Mini-Cameras/VCR. The mini-cameras and the VCR were operated during the test without incident.

j. Test Data. The data logger was controlled from the Exercise Control Room and was utilized on the third and fourth day of the test. During sample data extraction it was discovered that some of the CVCC instrumentation packets have been changed to incorporate new functionality and user requested measures. New header files were required by the site staff to properly accommodate these changes. These have been furnished. Upon review of the data tapes utilizing the new header files, the data appears sound. No loss of data packets was noted and it appears data extraction for the formative evaluation runs will proceed normally. The Control Measure extraction software was utilized. It appears to operate properly but selection of the overlays to be analyzed and definition of the data formats and data elements required for data analysis needs to be accomplished.

7. Fixes and Verification. As of the date of this report, the site staff have provided fixes for a number of the problem areas noted. Where the fixes have been reported an entry on the problem list has been made (e.g. *Fix made*). Where the fixes were made and have been verified an entry on the problem list has been made (e.g. *Fix made and verified*).

8. Conclusions. It is concluded that:

a. As many as possible of the "bugs" shown should be corrected and verified prior to the formative evaluations. Upon verification of the fixes, the network be considered suitable for the conduct of the formative evaluation.

b. No "showstopper" software or hardware "bugs" were encountered during the functional test.

c. The current release of software appears much more robust than that previously available. Much less "downtime" was encountered than was experienced with earlier versions.

d. Where corrections cannot be made but "workarounds" are known, the "workarounds" should be incorporated into the evaluation crew's training.

8. Recommendations. It is recommended that:

a. As many as possible of the problem areas noted be remedied. (Note: Certain fixes, have already been made).

b. Upon securing as many fixes as possible, the hardware and software network be considered suitable for use during the CVCC Formative Evaluations.

Problems Noted During the CVCC Functional Test

ID	Description	Pri'ty	Resp	Status
001	M1 simulator vision blocks need color adjustment.	1	Site	Color adjustments and cleaning were done on each simulator.
002	Keyboard 9 key restore ammo function on M1 restores 23 Sabot and 17 HEAT rounds as the CVCC basic load (All M1s). This function should restore 27 Sabot and 13 HEAT.	3	Source	
003	Grid Azimuth Display is barely visible and needs adjustment (Sim 2D).	1	Site	Adjustment made.
004	GPS and/or GPSE are not properly boresighted (Sim 2C).	1	Site	Boresighted both sights.
005	CVCC route files are not being transmitted or received properly. Usually, the routes never arrive. In the cases where routes are received, they reportedly take about 7 minutes to reach another simulator (All M1s).	1	Source	Fix made and verified.
006-007	SINCGARS voice communication to the ECR, TOC, or other simulators is broken or garbled until the radio simulator host is reset by a technician. Intercom communication is broken or garbled until radio simulator host is reset.	2	Site	SINCGARS/Masscomp must be powered completely down (power off) each morning and then initialized. (Verified procedure with site staff).
008-009	Sound system stops unexpectedly and does not operate until reset by a technician. Sound system stops and restarts unexpectedly.	2	Source	
010	----No action required ----			
011	Heading and location in the CCD status information box updates slowly (all M1s). This delay is estimated to be between 20 and 30 seconds. The tank icon does appear to update in real time.	1	Source	Fix made and verified.

Problems Noted During the CVCC Functional Test

ID	Description	Pri'ty	Resp	Status
012	CITV displays a "double" IFF symbol (Sim 3B).	2	Site	The TX 9U chassis (this chassis controls the CITV portion), the disk drive and the board set in the main 6U chassis were swapped out with another CIG unit and the problem still exists. To further debug this problem a swap the 6U chassis with another unit outside of the CVCC testbed.
013	CITV sometimes starts up with blue sky. Toggling the White Hot/Black Hot button corrects this problem (All M1s).	3	Source	
014	CITV loses one or more reticles, is missing some parts of the tank icon, or is missing sector set marks until CIG is reset by a technician (Sim 3B).	1	Site	This appears to be related to 012 above.
015	The driver's Steer-to-Indicator (STI) scrolls rapidly and is unreadable until reset by a technician.	1	Site	This is possibly due to vibration on the Steer-To power supply. An absorber has been added tothe power supply mount.
016	SINCGARS voice communication deteriorates during an exercise until the radio host is reset by a technician.	2	Site	See 006-007
017	Incoming CCD messages do not beep in the crew headsets in all sims.	1	Site	No fix as of this date. Further testing is required in an attempt to clarify the problem.
018	CCD cursor unexpectedly becomes "unconfined" until the CCD is reset. The cursor changes to an arrow when outside the area of the CCD. In some cases, an XTERM window control box appears somewhere on the monitor. When this occurs button highlighting does not turn off nor does the "Move Vehicle" function operate.	1	Source	Fix made and verified.

Problems Noted During the CVCC Functional Test

ID	Description	Pri'ty	Resp	Status
019	Occasionally, the CCD screen "splits" vertically with a small strip that includes the left inch of the CCD monitor shifting down slightly (All sims). Selecting one of the dedicated keys along the bottom of the CCD causes a second duplicate and slightly shifted key to appear. Manually refreshing the screen eliminates the problem.	1	Source	Fix made and verified.
020	When posting or unposting overlays or icons the button toggles very rapidly and the post or unpost is unsuccessful.	2	Source	Fix made and verified.
021	Bn TOC WS unexpectedly stops updating POSNAV icons until the program is stopped and restarted (recovered).	1	Source	
022	Companies and headquarters units appear prematurely kicked out of the aggregate battalion symbol on the Bn TOC WS (Danube).	2	Source	
023	On the route files menu PREP appears instead of SHOW (All sims).	1	Source	Fix made and verified.
024	Need to synchronize the clock in the CCTB. This includes the clocks in the SUN software, the large clock over the TOC tent, and the Listen Masscomp (all machines).	1	Site	This will be done on a daily basis.
025	The CCD crashes if an operator attempts an action during a restart. (Checkpoint).	1	Eval	A procedure should be implemented to notify operators when the restart begins and is complete so they do not touch the CCD during that time.
026	The The TOC WS crashes if the operator leaves open any windows or viewers that were not open when the WS was initialized.	1	Eval	Fix made and verified.

Problems Noted During the CVCC Functional Test

ID	Description	Pri'ty	Resp	Status
027	Message viewers sometimes do not get built correctly (All TOC WS). Message viewers appear to get built separately for each folder and the map display. A message can be moved to another folder and reopened.	2	Source	
028	The CITV sometimes "hangs-up" over the right "sector set mark" when in auto scan mode. (All sims).	1	Source	This can be "unhung" by switching to manual mode, moving the CITV indicator inside the autoscan sector limit and switching back to autoscan.
029	CCD cursor is difficult to see (All sims).	1	Source	Changed to a bold black X cursor. Fix made and verified.
030	Did not verify friendly unit aggregation/deaggregation operation.	1	Source	Correct per discussion. Change has been made.
031	SAF stations crash when exercise checkpoint is initiated from the CSS workstation.	1	Source	New SAF version has been delivered that lets the SAF operator set the SAF so that it will NOT participate in a CVCC exercise checkpoint.
032-033	TOC WS cannot be brought up without the Task Organization module (-notooe) or without (-notools) (All TOC WS)	2	Source	Fix made and verified.
034	Sender and originator on relayed messages are displayed in the wrong order on the CCD (all sims).	1	Source	Fix made and verified.
035	Fonts in the status information box, navigation waypoints, and on the CCD map grid lines are difficult to read. (All sims).	1	Source	Fix made and verified.
036	Information in the Op Eff displays must update while the window or menu is open (All M1s and TOC WS). Update intervals should be every 30 sec.	2	Source	Fixed - update interval is every 30 sec.
037	The OP Eff summary circles need appropriate labels for Ammo-A, Equipment -E, Fuel - F, and Personnel - P. (All sims and TOC WS).	2	Source	

Problems Noted During the CVCC Functional Test

ID	Description	Pri'ty	Resp	Status
038	Main gun drifts	1	Site	Calibration has been performed.
039	Control handle doesn't work (Sim 4C)	---	Site	Handle replaced on 9/3.
040	SAF units fail to send contact/spot reports in many cases. Shell and sit reps are received.	---	NA	Further investigation indicates the reports are sent as they are supposed to be
041	Control handles and touch screens need calibration in many sims.	1	Eval Site	Need to develop a standard procedure for setting cursor offset. Calibrate cursors.
042	Cursor sometimes jumps to top of CCD making it difficult to select options. This may be due to noise from the thumb controller. (All sims).	1	Source Site	Have not been able to reproduce. Still being monitored.
043	The distance to waypoint displayed on the driver's Steer-to-Indicator sometimes updates unpredictably.	2	Source Site	Unable to reproduce.
044	Terrain displayed in vision blocks jumps unexpectedly.	?		Unable to reproduce. Need more info.
045	Main gun reticle jumps unexpectedly. (sim ?)	1	Site	
046				
047	Ammo labels for HEAT and Sabot are are reversed on log reports.	1	Source	Fixed.
048	HEAT and Sabot values should be separated in the CCD reports.	2	Source	
049	PREV and NEXT labels in the TOC folders are confusing. Selecting PREV displays the message above the current message in the queue. This message has a later date-time-group. (All TOC WS)	3	Source	Fix made and verified.
050	CO/XO should be Y05 not Y36.	1	Eval	Corrected in configuration file.
051	Occasionally message viewers do not get built correctly and buttons or fields are miss sized or absent (TOC WS)	2	Source	See 027

Problems Noted During the CVCC Functional Test

ID	Description	Pri'ty	Resp	Status
052	Portions of message viewers are drawn off the screen. If top of the viewer is off screen the message cannot be moved. (TOC WS).	2	Source	See 027
053	CLOSE button sometimes does not appear on messages viewed on the map display. The only way to close this is to use the middle mouse button on the title bar. This causes a menu to appear. (All TOC WS).	2	Source	See 027
054	Selecting CLOSE on the menu described in 053 above sometimes causes the WS to crash.	1	Source	Fix made and verified.
055	Colors in the logistics module should change from Green to Amber at 89%, from Amber to Red at 69%, and from Red to Black at 59%.	N/A		See functional description. % changes vary. The AR is the guidance.
056	Using "Bring to front" function while selecting an overlay object and/or symbols sometimes causes the WS to crash (All TOC WS).	1	Source	Fix made but not yet verified.
057	All buttons and fields do not always appear on the TOC WS copy dialog box (Murray).	2	Source	See 027.
058	When clicking on the "copy overlay" button on the copy dialog box, the cursor went to the top of the display and the WS locked up (Danube, Jordan).	1	Source	See 027.
059	Deleted			
060	While routing 3 messages to another folder the TOC WS crashed after SEND was pushed. (Murray)	1	Source	Source unable to reproduce.
061	Deleted			
062	Stealth vehicle operation was not verified.	---	Site	Stealth is now available.
063	Portions of the create format dialog box remain after the message has been created, editied, and closed. (All TOC WS).	2	Source	See 027. Minimizing the format maodule then selecting maximize gets rid of this.

Problems Noted During the CVCC Functional Test

ID	Description	Pri'ty	Resp	Status
064	A TOC WS reported error when selecting Vegetation on the features menu and then selecting Close.	3	Source	Must let current operation finish before selecting Close. Fix made and verified.
065	The window manager disappears on right hand monitor of the TOC WS. (Isolated occurance) (Paris, Charles)	3	Source	Restarted window manager and TOC program let proggram continue.
066 thru 077	These do not apply to CVCC Formative Evaluation Functional Test.			
078	All CCD icons need to be enlarged by 25%.	1	Source	Fix made and verified.
079	CITV directional indicator on own tank icon on the CCD needs to be dashed and made more distinct.	1	Source	Fix made but not yet verified.
080	Range fans on TOC WSs need to be corrected. Mortars should have a minimum of 770 meters and a maximum of 6840 meters. Howitzers should have a maximum range of 18100 meters.	1	Source	Fix made and verified.
081	Distance to waypoint dispaly on the CCD only operates when autoadvance is selected under Navigation.	1	Source	Fix made but not yet verified.

Data Extracted from Checklists by Simulator

SIM	Simulator Operations	Mobility System	Armament & Autoloader	SINCGARS	CCD Status
4A	– GPSE texture bad.		– Initial gun drift – Ammo redistrib inoperative. – Can't open ammo door.	– Radio garbled.	– Cursor needs calibration. – Way points slow to update.
2C	– Master Caution light inoperative.		– Gun Loaded light inoperative.	– Broken commo.	
3C	– Center cupola vision block needs contrast adjustment. – Driver's center vision block needs adjustment.		– Filter switch not operational.	– Commo prob. with TOC.	– Time in Dtg is needs adjustment.
4C		–Driver's vision blocks need adjusting.		– Loader could not transmit.	– Lag in driver's steer–to update.

SIM	Simulator Operations	Mobility System	Armament & Autoloader	SINCGARS	CCD Status
2D	– Left vision block in cupola is darker than others.		– Azimuth indicator numbers are misaligned.	– Gunner's headset inop. – Broken commo with driver.	– Split CCD image.
2B					– Seven second lag for driver's steer–to update.
3B	– Sound system out. – Driver's center vision block brighter than others.			– Set A inop. – Commo breaks up.	– Five sec. lag for driver's steer–to update. – Time in DTG is off.
4B			– Gun drifts left when palm switch is pressed. – Can't move PCW flush to right.		– Lag in vehicle position update.

SIM	POSNAV	CCD MAPS	CCD REPORTS	CCD MSGS	CITV
4A	– Trouble sending and receiving route files.	– Section of map grid missing.	– Selection of an item from Intel summary page fails to return to associated page in the report.	– A05 did not receive navig–ation routes. – Duplicate shell repts in receive queue.	
2C	– Can't send or receive routes.	– Difficult to acquire arrow for the move vehicle mode.	– Other sims not receiving route files.		
3C	– Grid for a WP icon is inaccur–ate. – Took 7 mins to receive a route.	– Duplicate overlay does not update. – Unpost icon & Reset are not operational.	– OT line inop in CFF.	– No Msg priority beeps heard.	
4C	– 5 min delay in transmitting route.	– Gridlines don't connect at 1:125000 scale.		– Msg beeps heard only faintly.	

SIM	POSNAV	CCD MAPS	CCD REPORTS	CCD MSGS	CITV
2D	– Trouble sending and receiving route files.		– Problem receiv–ing Contact reports from 1st Plat Ldr (SAFOR).	– No message beeps. – Can't relay messages lower.	
2B					
3B	– Problems send–ing routes.				– Tank icon disappeared. – 10X out.
4B	– No beeps for WP auto advance.	– Hard to read grid nrs at 1:125000 scale.		– Two report keys highlighted at the same time.	– Drifts when palm switch engaged.